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FLOW CHARACTERISTICS OF NEW MEXICO STREAMS

PART I
FLOW DURATION

by
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United States Geological Survey

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11

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INCH-POUND UNIT TO METRIC UNIT CONVERSION FACTORS

The following table contains factors for converting from inch-pound to metric units.

Multiply inch-pound units	By	To obtain metric units
ft (foot)	0.3048	m (meter)
mi (mile)	1.609	km (kilometer)
acre	4047	m^2 (square meter)
	.4047	hm^2 (square hectometer)
	.004047	km^2 (square kilometer)
mi^2 (square mile)	2.590	km^2 (square kilometer)
ft^3 (cubic foot)	.02832	m^3 (cubic meter)
acre-ft (acre-foot)	1233	m^3 (cubic meter)
	1.233×10^{-3}	hm^3 (cubic hectometer)
	1.233×10^{-6}	km^3 (cubic kilometer)
ft^3/s (cubic foot per second)	.02832	m^3/s (cubic meter per second)

FLOW CHARACTERISTICS OF NEW MEXICO STREAMS

PART I

FLOW DURATION

By

Louis J. Reiland

ABSTRACT

Flow-duration tables have been developed from daily streamflow records collected at 156 gaging stations in New Mexico and parts of Colorado and Oklahoma. These tables show the percentages of time that various daily discharges were equaled or exceeded.

Records for 32 long-term gaging sites having virtually natural flows were selected as index stations. By correlation with the long-term records, flow-duration data obtained at 70 short-term stations have been extended in time to represent data for a 43-year base period, 1931-73. Flow-duration data obtained at eight short-term stations have been extended to represent data for a 39-year base period, 1935-73. For 38 stations flow-duration tables are presented only for the period of record, there being no reliable basis for extending the record.

INTRODUCTION

A flow-duration curve is a cumulative frequency curve which shows the percentage of time that various rates of streamflow were equaled or exceeded during a period of record. Flow-duration curves have been used for many decades to define the variability and availability of flow. They have been used when dealing with water supply, power development, pollution abatement, and erosion problems. Flow-duration curves provide a convenient means of comparing flow characteristics of different streams. The flow-duration data used in the comparison should be based on the longest possible concurrent period of record in order that differences in the duration curves

will reflect differences in climatic or drainage-basin characteristics rather than different periods of time. Very seldom do all gaging station records in a given area cover a concurrent period; however, techniques are available, under favorable conditions, for the extension of short-term flow-duration data to a common base period. The index station method and other techniques used by the U.S. Geological Survey to make these extensions and to regionalize data are described by Searcy (1959, p. 6-21, 32). Under appropriate conditions flow-duration curves for a given time period can be used to predict flow characteristics during a similar future time period.

This report is the first of a two-report series based on studies of daily streamflow records in New Mexico. The studies will define some of the flow characteristics of New Mexico streams. This report evaluates available flow-duration data and presents flow-duration tables for selected stations for the period of record and whenever possible for a standard base period, October 1930 through September 1973. A subsequent report will show low-flow and high-flow frequency data for various time periods. Reiland and Haynes (1963) previously presented basic data on flow duration, low-flow frequency, and high-flow frequency through 1959.

ACKNOWLEDGMENTS

The preparation of this report was financed by the New Mexico Interstate Stream Commission and the New Mexico State Engineer. It was prepared by Water Resources Division personnel of the U.S. Geological Survey under the direction of W. E. Hale, New Mexico District Chief. L. A. Waite, Hydrologist, assisted in the interpretation of the basic data.

DEVELOPMENT OF FLOW-DURATION RELATIONS

A flow-duration curve is a concise portrayal of the variations of discharge at a site. It is a cumulative frequency curve which shows the percentage of time that various rates of streamflow were equaled or exceeded during a period of record, information that is not apparent from a chronological record. Some of the factors affecting the shape of flow-duration curves are basin topography, geology, and shape; pattern of precipitation; degree of stream regulation; and magnitude of stream depletion. Flow-duration curves can be prepared on the basis of daily, weekly, monthly, or annual mean discharges. The daily mean discharges were selected as the basis for the flow-duration data presented in this report because daily values are more readily available, more numerous, and more useful than weekly or monthly values.

Records available and selected for study

In New Mexico the collection of streamflow records began in 1889 and by 1973 daily discharge records had been collected at more than 300 sites. Additional usable records are available for nearby sites in adjacent states. The periods of record vary in length from 1 year to 75 years. The records are of both natural flow and flow affected by as many as eight artificial changes. Since 1930, the creation or enlargement of 12 reservoirs in New Mexico has significantly reduced the number of natural streamflow records that are available to define long-term flow-duration conditions.

From an inventory of all available records a selection was made of those records that were considered homogeneous enough to provide usable flow-duration data. Included in the selection are two streamflow records where flow is almost completely regulated. Many other included records are of streams that are affected by changes in regulation and depletions. The stations selected are listed in table 1 along with the U.S. Geological Survey station number and the number of years of record. The location of each station is shown in figure 1.

Flow-duration data

Almost all daily discharge records collected at sites in the United States are stored on magnetic tapes in the Geological Survey Computer Center at Reston, Virginia under a system called WATSTORE. Under this system programs are available which efficiently process and tabulate these data in a variety of formats.

Table 2 is an example of computer-processed flow-duration data from that source. Comparable data could have been obtained by manual processing. In the upper part of table 2 is tabulated the number of days for each water year that the daily discharge fell in each of 35 "class intervals" or discharge ranges (Searcy, 1959, p. 6). Thirty-four values of discharge (other than zero) are selected so that the discharges are fairly well distributed along a logarithmic scale between the lowest nonzero daily discharge and the second highest daily discharge. Each class interval includes a selected discharge (listed under "CFS" in the table), and all other daily discharges up to but not including the next higher selected discharge. In the lower part of table 2 the results are summarized as cumulative frequency data. The column headed "TOTAL" shows the total number of days in each class interval for the period of record. The column headed "ACCUM" shows the cumulative total of days beginning with the number of days in the highest class; therefore, the first item in the column is the total number of days in the period of record. The column headed "PERCT" is a conversion of the accumulated days to percent of time, where the total days of record is equal to 100 percent. The data in the columns headed CFS and PERCT provide the coordinates for plotting the flow-duration curve

Table 1.--Gaging stations, in downstream order, for which flow-duration data are published

STATION NUMBER: A number assigned by U.S. Geological Survey, which uniquely identifies the station.

STATION NAME: Gaging station name assigned by the U.S. Geological Survey. Stations are in New Mexico unless otherwise indicated.

YEARS OF RECORD: Number of years of streamflow record available for use in flow-duration computations.

FLOW-DURATION DATA PAGE: Page number in this report where flow-duration data can be found.

Station number	Station name	Years of record	Flow-duration data page
	LOWER MISSISSIPPI RIVER BASIN		
	ARKANSAS RIVER BASIN		
07124500	Purgatoire River at Trinidad, CO	65	69
07153500	Dry Cimarron River near Guy	31	69
07154500	Cimarron River near Kenton, OK	23	69
07199000	Canadian River near Hebron	27	69
07203000	Vermejo River near Dawson	49	70
	Cimarron River:		
07205000	Sixmile Creek near Eagle Nest	15	70
07206300	Tolby Creek near Eagle Nest	7	70
07206400	Clear Creek near Ute Park	7	70
07207000	Cimarron River near Cimarron	23	71
07207500	Ponil Creek near Cimarron	23	71
07208500	Rayado Creek at Sauble Ranch, near Cimarron	51	71
07211000	Cimarron River at Springer	48	71
07211500	Canadian River near Taylor Springs	27	72
07214000	Canadian River near Roy	29	72
07214500	Mora River near Holman	20	72
07214800	Rio La Casa near Cleveland	14	72
07216500	Mora River near Golondrinas	52	73
07217000	Coyote Creek below Black Lake	10	73
07217100	Coyote Creek near Guadalupita	17	73
07218000	Coyote Creek near Golondrinas	44	73
07220000	Sapello River at Sapello	17	74
07221000	Mora River near Shoemaker	52	74

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Table 1.--Gaging stations, in downstream order, for which flow-duration data are published - Continued

Station number	Station name	Years of record	Flow-duration data page
	LOWER MISSISSIPPI RIVER BASIN - Continued		
	ARKANSAS RIVER BASIN - Continued		
07221500	Canadian River near Sanchez	39	74
07222500	Conchas River at Variadero	37	74
07226500	Ute Creek near Logan	31	75
07227100	Revuelto Creek near Logan	14	75
07227200	Tramperos Creek near Stead	7	75
07232500	Beaver River near Guymon, OK	36	75
	WESTERN GULF OF MEXICO BASINS		
	RIO GRANDE BASIN		
08251500	Rio Grande near Lobatos, CO	63	76
08263000	Latir Creek near Cerro	24	76
08263500	Rio Grande near Cerro	25	76
08264000	Red River near Red River	14	76
08264500	Red River below Zwe le damsite, near Red River	10	77
08265000	Red River near Questa	43	77
08266000	Cabresto Creek near Questa	30	77
08267000	Red River at mouth, near Questa	22	77
08267500	Rio Hondo near Valdez	39	78
08268500	Arroyo Hondo at Arroyo Hondo	45	78
08268700	Rio Grande near Arroyo Hondo	10	78
08269000	Rio Pueblo de Taos near Taos	22	78
08271000	Rio Lucero near Arroyo Seco	19	79
08275000	Rio Fernando de Taos near Taos	10	79
08275300	Rio Pueblo de Taos near Ranchito	16	79
08275500	Rio Grande del Rancho near Talpa	11	79
08275600	Rio Chiquito near Talpa	16	80
08276000	Rio Pueblo de Taos at Los Cordovas	54	80
08276300	Rio Pueblo de Taos below Los Cordovas	16	80
08276500	Rio Grande below Taos Junction Bridge, near Taos	48	80
	Embudo Creek:		
08278500	Rio Santa Barbara near Llano	6	81
08279000	Embudo Creek at Dixon	39	81

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Table 1.--Gaging stations, in downstream order, for which flow-duration data are published - Continued

Station number	Station name	Years of record	Flow-duration data page
	WESTERN GULF OF MEXICO BASINS - Continued		
	RIO GRANDE BASIN - Continued		
08270500	Rio Grande at Embudo	75	81
08281100	Rio Grande above San Juan Pueblo	10	81
08283500	Rio Chama at Los Ojos	27	82
08284100	Rio Chama near La Puente	18	82
08284200	Willow Creek above Heron Reservoir, near Los Ojos	7	82
08284300	Horse Lake Creek above Heron Reservoir, near Los Ojos (Park View)	11	82
08284500	Willow Creek near Los Ojos	27	83
08285500	Rio Chama below El Vado Dam	37	83
08286500	Rio Chama above Abiquiu Reservoir	12	83
08288000	El Rito near El Rito	19	83
08289000	Rio Ojo Caliente at La Madera	41	84
08290000	Rio Chama near Chamita	48	84
08291000	Santa Cruz River at Cundiyo	41	84
08292000	Santa Clara Creek near Espanola	6	84
	Rio Nambe head at Pojoaque River:		
08294300	Rio Nambe at Nambe Falls, near Nambe	10	85
08295000	Rio Nambe near Nambe	19	85
	Rio Tesuque:		
08302200	North Fork Tesuque Creek near Santa Fe	7	85
08302500	Tesuque Creek above diversions, near Santa Fe	15	85
08313000	Rio Grande at Otowi Bridge, near San Ildefonso	70	86
08318000	Galisteo Creek at Domingo	29	86
08319000	Rio Grande at San Felipe	44	86
08321500	Jemez River below East Fork, near Jemez Springs	15	86
08323000	Rio Guadalupe at Box Canyon, near Jemez	20	87
08324000	Jemez River near Jemez	25	87
08329500	Rio Grande near Bernalillo	28	87
08329900	North Floodway Channel near Alameda	5	87
08330000	Rio Grande at Albuquerque	31	88
08332000	Rio Grande near Bernardo	24	88
08334000	Rio Puerco above Arroyo Chico, near Guadalupe	39	88
08340850	Arroyo Chico near Guadalupe	30	88

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Table 1.--Gaging stations, in downstream order, for which flow-duration data are published - Continued

Station number	Station name	Years of record	Flow-duration data page
	WESTERN GULF OF MEXICO BASINS - Continued		
	RIO GRANDE BASIN - Continued		
08343000	Rio San Jose at Grants	12	89
08343100	Grants Canyon at Grants	11	89
08343500	Rio San Jose near Grants	37	89
08351500	Rio San Jose at Correo	30	89
08352500	Rio Puerco at Rio Puerco	39	90
08353000	Rio Puerco near Bernardo	33	90
08354000	Rio Salado near San Acacia	26	90
08358500	Rio Grande at San Marcial	45	90
08360000	Alamosa Creek near Monticello	26	91
	Pecos River:		
08377900	Rio Mora near Terrero	10	91
08378500	Pecos River near Pecos	45	91
08379200	Tecolote Creek near San Pablo	5	91
08379500	Pecos River near Anton Chico	49	92
08380500	Gallinas Creek near Montezuma	47	92
08382500	Gallinas River near Colonias	22	92
08383000	Pecos River at Santa Rosa	47	92
08383500	Pecos River near Puerto de Luna	35	93
08384500	Pecos River below Sumner Dam	36	93
08386000	Pecos River near Acme	36	93
	Rio Hondo:		
08387000	Rio Ruidoso at Hollywood	20	93
08387600	Eagle Creek below South Fork, near Alto	7	94
08388000	Rio Ruidoso at Hondo	25	9.
08389500	Rio Bonito at Hondo	25	94
08390500	Rio Hondo at Diamond A Ranch, near Roswell	34	94
08393200	Rocky Arroyo above Two Rivers Reservoir, near Roswell	10	95
08394500	Rio Felix at old highway bridge, near Hagerman	34	95
08395500	Pecos River near Lake Arthur	35	95
08396000	Cottonwood Creek near Lake Arthur	31	95
08396500	Pecos River near Artesia	67	96

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Table 1.--Gaging stations, in downstream order, for which flow-duration data are published - Continued

Station number	Station name	Years of record	Flow-duration data page
	WESTERN GULF OF MEXICO BASINS - Continued		
	RIO GRANDE BASIN - Continued		
	Pecos River:		
08398500	Rio Penasco at Dayton	22	96
08400000	Fourmile Draw near Lakewood	22	96
08401200	South Seven Rivers near Lakewood	10	96
08401900	Rocky Arroyo at highway bridge, near Carlsbad	10	97
08402000	Pecos River at damsite 3, near Carlsbad	30	97
08405000	Pecos River at Carlsbad	52	97
08405500	Black River above Malaga	26	97
08406500	Pecos River near Malaga	41	98
08407500	Pecos River at Red Bluff	36	98
08408500	Delaware River near Red Bluff	36	98
	MIMBRES RIVER BASIN		
08476300	Mimbres River at McKnight damsite, near Mimbres	9	98
08477000	Mimbres River near Mimbres	43	99
08477500	Mimbres River near Faywood	30	99
08477600	San Vicente Arroyo at Silver City	12	99
	TULAROSA VALLEY		
08481500	Rio Tularosa near Bent	25	99
08486250	Tularosa Valley tributary near White Sands	8	100
08486260	Tularosa Valley tributary at White Sands	8	100
	COLORADO RIVER BASIN		
	SAN JUAN RIVER BASIN		
09342500	San Juan River at Pagosa Springs, CO	38	100
09346000	Navajo River at Edith, CO	49	100
09346400	San Juan River near Carracas, CO	11	101
09349500	Piedra River near Piedra, CO	33	101
09349800	Piedra River near Arboles, CO	11	101
09350500	San Juan River at Rosa	34	101
09354500	Los Pinos River at La Boca, CO	22	102
09355000	Spring Creek at La Boca, CO	22	102
09355500	San Juan River near Archuleta	6	102

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Table 1.--Gaging stations, in downstream order, for which flow-duration data are published - Concluded

Station number	Station name	Years of record	Flow-duratio data page
	COLORADO RIVER BASIN - Continued		
	SAN JUAN RIVER BASIN - Continued		
09356500	San Juan River near Blanco	24	102
09361500	Animas River at Durango, CO	63	103
09363500	Animas River near Cedar Hill	39	103
09364500	Animas River at Farmington	50	103
09365000	San Juan River at Farmington	43	103
09365500	La Plata River at Hesperus, CO	55	104
09366500	La Plata River at Colorado-New Mexico State line	50	104
09368000	San Juan River at Shiprock	39	104
	LITTLE COLORADO RIVER BASIN		
	Carrizo Creek:		
09386050	Largo Creek near Mangas	7	104
09395500	Puerco River at Gallup	5	105
	GILA RIVER BASIN		
09430500	Gila River near Gila	46	105
09430600	Mogollon Creek near Cliff	6	105
09431000	Gila River near Cliff	9	105
09431500	Gila River near Redrock	36	106
09432000	Gila River below Blue Creek, near Virden	45	106
09442680	San Francisco River near Reserve	14	106
09442692	Tularosa River above Aragon	7	106
09443000	San Francisco River near Alma	9	107
09443500	Whitewater Creek near Mogollon	10	107
09444000	San Francisco River near Glenwood	46	107
09454000	San Simon River near Rodeo	5	107

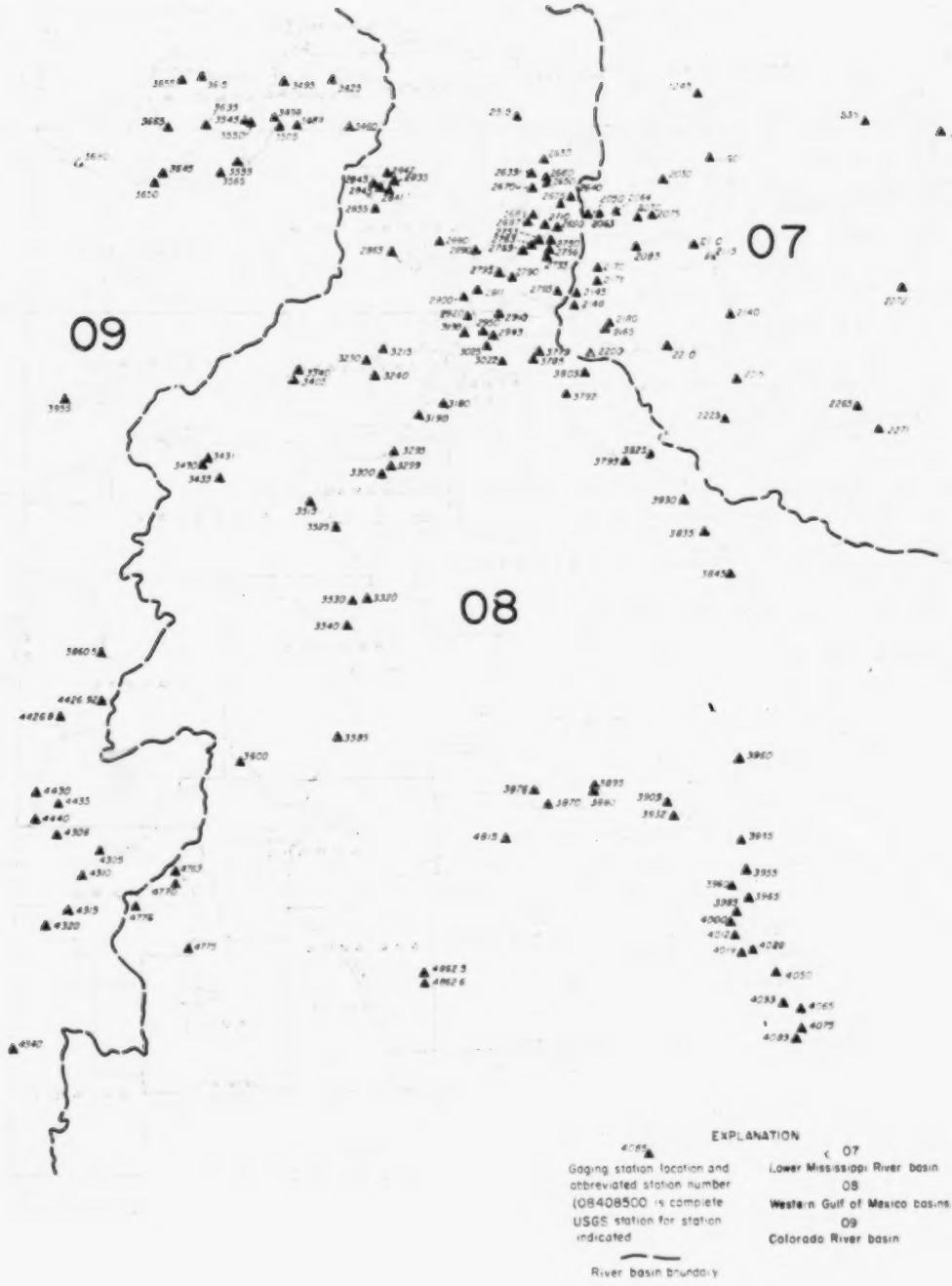

Figure 1.--Location of gaging stations for which flow-duration data were computed, New Mexico, and parts of Colorado and Oklahoma.

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Table 2.--Flow-duration data for station 08383500, Pecos River near Puerto de Luna, New Mexico

[Duration table of daily discharge for year ending September 30]

CLASS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
YEAR	NUMBER OF DAYS IN CLASS																																		
1939					5	94	99	24	30	8	47	11	13	3	2	1	2	4		3	1	3		2	3										
1940					2	51	153	46	22	19	28	12	14	7	5	2	2	1		1									1						
1941							61	19	55	9	3	5	6	10	21	19	9	6	11	19	13	8	13	17	3	3	1	4	2	1	1	1	2	2	1	
1942							5	50	68	36	24	18	20	17	22	10	17	15	19	13	7	6	4	4		3	3	1	2							1
1943							2	63	179	59	23	19	9	2		2	2																			
1944						12	109	140	38	12	9	4	4	17	7	5	3	4	1				1												
1945						1	76	147	50	13	11	15	12	13	12	5	3	4			1	1	1												
1946					6	13	37	139	112	8	7	5	4	6	5	7	4	2	2	3	2		2		1										
1947						30	47	155	84	10	6	4	5	5	5	3	5	2	2		1					1										
1948						11	44	148	56	23	10	14	16	9	13	10	2	3	4	1		1			1										
1949			2	1	4	21	112	66	19	5	14	10	19	19	12	16	5	7	3	6			5	6	2	2	1	1	1						
1950						2	141	124	37	8	7	4	10	4	2	5	3	1		8			3	1		2		1	1						
1951		12	16	13	44	43	145	46	19	4	5	6	4	4	4	1	1	1	1	1				1										
1952						16	67	141	22	18	11	19	13	12	17	13	6	2	1	1	2		1		1	1									
1953				3	38	75	132	66	11	6	9	6	3	3	4	1	1						3		2										
1954			5	25	56	62	141	24	16	10	4	7	5	1	2	2		1		1				1	1					1				
1955				8	45	77	133	21	10	7	9	7	13	2	6	6	4	1	4	4			3	1	1	1						2			
1956					43	72	114	40	3	6	1	4	4	3	4	1	1	1	1		1	1	2		1										
1957			7	18	66	130	32	6	3	8	9	12	9	9	7	4	5	3	1	3	1	2	4	2	1		1	1			1				
1958						12	145	32	26	13	20	14	14	9	13	5	6	5	5	10	16	14	9	2					1						
1959						22	116	130	9	7	15	4	5	4	8	4		1	1	3	1			2	1										
1960							197	33	21	19	21	14	26	14	7	2	3	4	1	2	1	1													

Table 2.--Flow-duration data for station 03383500, Pecos River near Puerto de Luna, New Mexico - Concluded

CLASS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
YEAR	NUMBER OF DAYS IN CLASS																																		
1961						14	12	3	9	19	10	[illegible]	10	22	17	5	4	3	3	3	4	[illegible]	2	[illegible]	1										
1962						[illegible]	4	9	5	12	[illegible]	4	6	8	17	13	7	4	4	3		1													
1963					4	5	11	[illegible]	6	6	2	5	4	4	2	1	1	2				[illegible]	1	2	1										
1964					57	7	4	19	2	1	1	5			1								1											
1965					9	7	11	[illegible]	6	10	11	[illegible]	14	23	6	12	7	4	3	1	4	1	1	2										
1966						5	[illegible]	6	7	4	16	10	9	5	10	2	1	2	3		1	5	2	2	[illegible]	2	2								
1967						47	7	0	1	6	1	2	8	7	[illegible]	8	5	2	5	2	3	2				1		1							
1968					2	7	10	[illegible]	14	19	15	15	4	19	15	8	2	3	1	1		3			2	1								
1969						1	[illegible]	[illegible]	17	12	14	[illegible]	15	21	15	9	4	1	2	5	[illegible]		1	1	1				1		1			
1970					3	11	7	[illegible]	25	[illegible]	13	5	5	6	5		2	5	1	1	1	1	2	1	1									
1971						16	5	[illegible]	[illegible]	9	4	3	5	5	5	6	4	4		1	2		2		1			1							
1972						8	5	[illegible]	[illegible]	16	18	12	5	9	9	5	3	2	8		3	2	1	2	2	1	1	1							
1973							15	[illegible]	[illegible]	[illegible]	[illegible]	19	18	11	15	14	13	6	10	15	13	16	8	4	5	2									

CLASS	CFS	TOTAL	ACCUM	PERCT	CLASS	CFS	TOTAL	ACCUM	PERCT	CLASS	CFS	TOTAL	ACCUM	PERCT	CLASS	CFS	TOTAL	ACCUM	PERCT
0	0.00	0	12794	100.0	9	160.00	426	3409	26.5	18	880.00	92	516	4.0	27	4700	7	65	.5
1	84.00	12	12784	99.9	10	190.00	466	2983	23.2	19	1000.00	120	424	3.3	28	5700	5	18	.1
2	91.00	30	12772	99.8	11	230.00	345	2517	19.5	20	1300.00	66	304	2.4	29	6700	3	13	.1
3	96.00	149	12742	99.7	12	270.00	381	2172	16.9	21	1500.00	77	238	1.9	30	8400	2	10	.1
4	64.00	656	12593	98.5	13	330.00	299	1791	14.0	22	1800.00	63	161	1.3	31	10000	4	8	.1
5	72.00	1178	11937	93.3	14	400.00	239	1492	11.7	23	2200.00	37	98	.8	32	16000	2	4	.0
6	80.00	1965	10759	84.1	15	490.00	141	1253	9.8	24	2700.00	19	61	.5	33	19000	1	2	.0
7	110.00	1965	9713	75.9	16	590.00	119	1112	8.7	25	3200.00	7	42	.3	34	18000	1	1	.0
8	130.00	809	8748	68.4	17	710.00	109	993	7.8	26	3700.00	12	35	.3					

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shown in figure 2. Flow-duration data for this station was correlated graphically with data for the same period for the station Pecos River at Santa Rosa to help delineate a smooth curve.

Selection of base period

The selection and effective use of a base period is dependent on the availability of a common period of time during which representative stream-flow records, preferably for natural flow, were collected at a network of stations distributed throughout the State. At least one long-term station should be available in each area subjected to different hydrologic conditions. In the selection of a base period little weight can be given to long-term records on a regulated stream if the record is not representative of conditions on nearby streams.

From an inventory of available records it is evident that adequate coverage was not available prior to the 1931 water year. Since then, nearly complete records have been collected at 12 sites that can be considered natural flow and at 20 additional sites on major streams that are not affected significantly by regulation or diversions. These sites are reasonably well distributed throughout the state except in the Tularosa Valley, the lower Pecos River, and the Little Colorado River basins. These 32 stations are adequate for the establishment of a base period of 43 years from October 1930 through September 1973. The stream-flow records collected during this period are considered to be fairly representative of long-term records because they include the droughts of the 1930's and 1950's as well as the high flows of the 1940's. A shorter base period of 39 years, October 1934 through September 1973, was established for the Rio Puerco basin.

Interpretation of data

The flow-duration data as tabulated, either manually or by the computer, are raw data for a specific period of record. The period of record, no matter how long, is but a small sample from a much larger population and as such may or may not be representative of the long-term conditions. It is desirable to provide data representing long time periods. For comparability of data, it is desirable also that duration data represent a common long-term base period.

Searcy (1959) suggests a technique wherein short-period flow data could be adjusted to represent base-period data. The Searcy technique of graphically cross-correlating short-term data with concurrent data from an index station having records covering the base period was used to define base-period flow-duration data for many short-term sites.

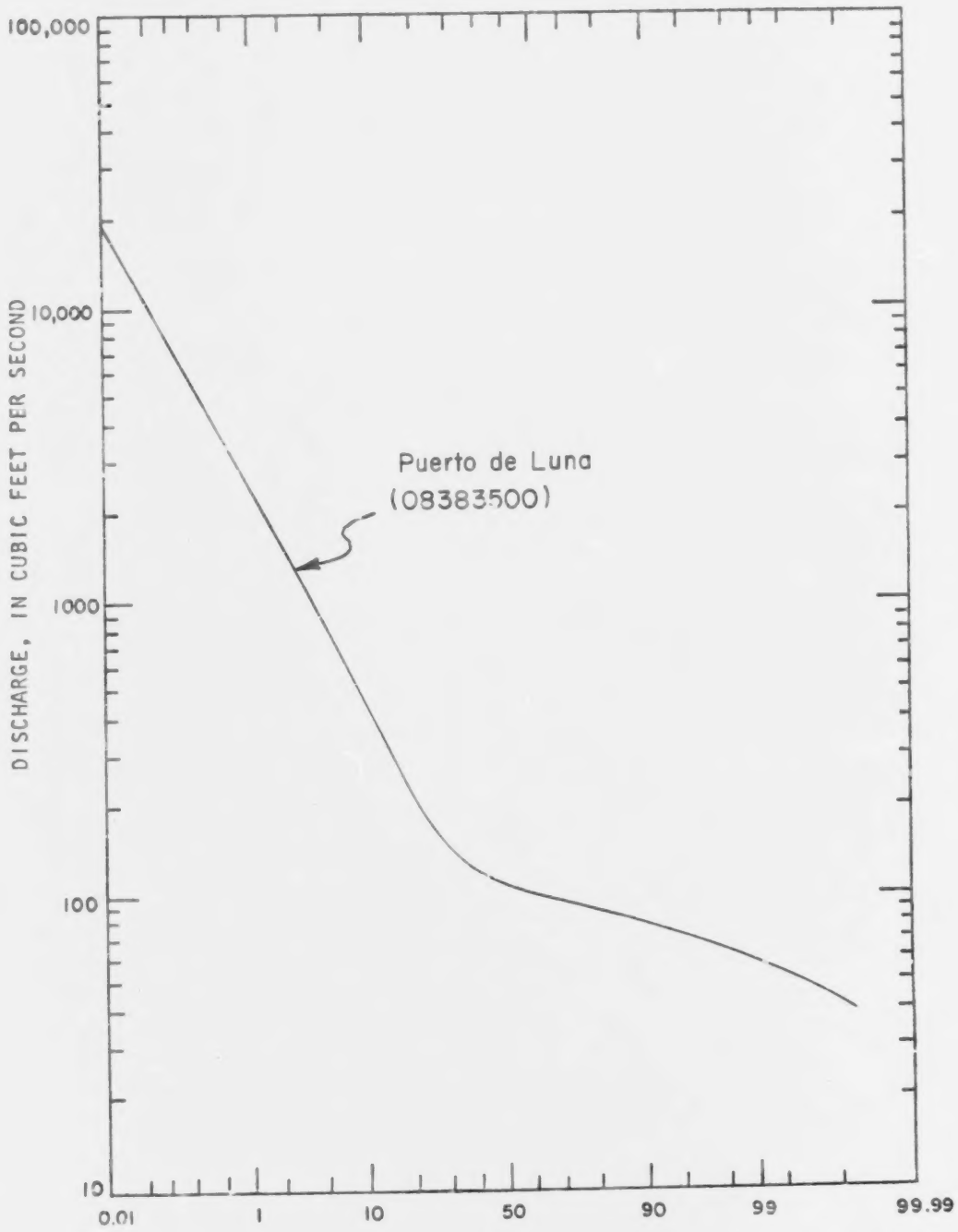

Figure 2.--Flow-duration curve for Pecos River near Puerto de Luna, New Mexico. Points represent coordinates of curve for gaged period 1939-73; curve represents base period 1931-73.

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From some stations an inspection of the basic data revealed a change in the flow characteristics caused by factors other than regulation which made it necessary to divide the record and show flow-duration data for the most recent flow conditions.

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PRESENTATION OF DATA

Station descriptions

A station description is presented, in downstream order, for each station analyzed (table 3). Under "LOCATION" is given the most recent site, latitude and longitude, landline locations, county, and nearby physical landmarks. During the period of record some stations may have been moved, but usually all records published under the same station number are considered equivalent.

Under "DRAINAGE AREA" is given the total drainage area in square miles; any noncontributing area is noted. For stations on the Pecos River only contributing area is given.

Under "REMARKS" details are given about the station, including its use as an index station or extension of the record by correlation; the station numbers of other stations used to extend the records to the base period are listed. Information is also given about storage reservoirs, diversions, and other manmade changes that are known to affect the flow.

Duration tables and average discharge

Duration data are presented in table 4 for 140 stations in New Mexico, 14 in Colorado, and 2 in Oklahoma. For stations where the period of record is the same or approximately the same as the base period, only the data for the base period are presented. Where the period of record is significantly different from the base period, data are usually presented for the period of record and the base period.

The average discharge for the period of record and the base period are listed in table 4 with the corresponding flow-duration data. The average discharge for the base period was computed from published data if records were available for the base period. If not, the average discharge for the base period was determined from a plot of the flow-duration curve. The curve was separated into 25 to 30 ranges of percent duration. The average discharge in each range was read from the curve and then multiplied by its respective range in percent duration. The separate products were added and the sum divided by 100 percent. The result of this step integration is the average discharge.

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Table 3.--Gaging station descriptions

ARKANSAS RIVER BASIN

07124500 PURGATOIRE RIVER AT TRINIDAD, COLO.

LOCATION.--Lat 37°10'15", long 104°30'31", in SW¼SE¼ sec.13, T.33 S., R.64 W., Las Animas County, Hydrologic Unit 11020010, on left bank 90 ft downstream from railroad bridge, and 680 ft downstream from Animas Street Bridge in Trinidad, Colorado.

DRAINAGE AREA.--795 mi^2.

REMARKS.--Used as an index station; flow-duration data for 1961 water year estimated on basis of data for station 07203000. Diversions above station for irrigation of about 6,500 acres.

07153500 DRY CIMARRON RIVER NEAR GUY, N. MEX.

LOCATION.--Lat 36°59'15", long 103°25'25", in SE¼ sec.21, T.32 N., R.33 E., Union County, Hydrologic Unit 11040001, on right bank 1.5 mi upstream from Baker damsite, 1.7 mi northwest of Valley, 3.0 mi upstream from Travesser Creek, 12 mi north of Guy, 26 mi northwest of Kenton, Okla., and at mile 634.5.

DRAINAGE AREA.--545 mi^2.

REMARKS.--Extended to base period by station 07232500. Diversions for irrigation of about 6,500 acres above station.

07154500 CIMARRON RIVER NEAR KENTON, OKLA.

LOCATION.--Lat 36°55'36", long 102°57'31", in SE¼ sec.4, T.5 N., R.1 E., Cimarron County, Hydrologic Unit 11040001, near right bank on downstream side of pier of county road bridge, 1.5 mi upstream from North Carrizo Creek, 1.7 mi northeast of Kenton, 2.2 mi downstream from Carrizozo Creek, and at mile 594.0.

DRAINAGE AREA.--1,106 mi^2, of which 68 mi^2 is probably noncontributing.

REMARKS.--Extended to base period by station 07153500. Extensive diversions for irrigation above station.

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Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07199000 CANADIAN RIVER NEAR HEBRON, N. MEX.

LOCATION.--Lat 36°47'14", long 104°27'42", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, near right bank at downstream end of bridge pier on U.S. Highway 64 and 85, 3.1 mi north of Hebron, 5.0 mi upstream from Chicorica Creek, 8.0 mi south of Raton, and at mile 888.1.

DRAINAGE AREA.--229 mi^2.

REMARKS.--Unused as an index station; extended to base period by station 07203000. Diversions above station for irrigation of a few hundred acres. Part or all of low flow can be diverted 1.6 mi above station for stock water, off-channel storage and irrigation.

07203000 VERMEJO RIVER NEAR DAWSON, N. MEX.

LOCATION.--Lat 36°40'50", long 104°47'08", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, on left bank 1.3 mi north of Dawson, 2.3 mi upstream from Rail Canyon, and at mile 22.5.

DRAINAGE AREA.--301 mi^2.

REMARKS.--Classed as an index station. Diversions for irrigation of small acreage and mountain meadows above station.

07205000 SIXMILE CREEK NEAR EAGLE NEST, N. MEX.

LOCATION.--Lat 36°31'07", long 105°16'29", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on left upstream wingwall of concrete control, 250 ft downstream from concrete box culvert on U.S. Highway 64, and 2.6 mi southwest of Eagle Nest.

DRAINAGE AREA.--10.5 mi^2.

REMARKS.--Not extended to base period. Diversions for irrigation of about 300 acres above station.

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Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07206300 TOLBY CREEK NEAR EAGLE NEST, N. MEX.

LOCATION.--Lat 36°31'20", long 105°13'30", in Maxwell Grant, Colfax County, Hydrologic Unit 1108002, on right bank, 1.0 mi upstream from mouth, and 2.5 mi southeast of Eagle Nest.

DRAINAGE AREA.--8.5 mi^2.

REMARKS.--Data presented for period of record only. This drainage basin was sheltered by mountains from storm of 1965. Flow duration data for water years 1962-63 was computed manually and added.

07206400 CLEAR CREEK NEAR UTE PARK, N. MEX.

LOCATION.--Lat 36°31'35", long 105°10'30", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on right bank 0.25 mi upstream from mouth, and 4.0 mi southwest of Ute Park.

DRAINAGE AREA.--7.44 mi^2.

REMARKS.--Flow-duration data for water years 1962, 1963 computed manually. Extended to base period by station 07208500. Natural flow but 1965 was an abnormal year.

07207000 CIMARRON RIVER NEAR CIMARRON, N. MEX.

LOCATION.--Lat 36°31'11", long 104°58'42", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on right bank 1,200 ft downstream from Turkey Creek Canyon, 3.6 mi west of Cimarron, and at mile 31.6.

DRAINAGE AREA.--294 mi^2.

REMARKS.--Flow partly regulated by Eagle Nest Dam. Diversions above station for irrigation of about 3,500 acres. No good basis on which to extend record to base period. Records are not equivalent to those for station "at Ute Park" No. 07206500.

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Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07207500 PONIL CREEK NEAR CIMARRON, N. MEX.

LOCATION.--Lat 36°34'25", long 104°56'46", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on left bank 1.6 mi downstream from confluence of North and South Ponil Creeks, and 4.7 mi northwest of Cimarron.

DRAINAGE AREA.--171 mi^2.

REMARKS.--Extended to base period by station 07208500. Diversions for irrigation of about 250 acres above station. Records for water years 1917-18, 1920-24, 1928 collected at nearby sites are evidently not equivalent.

07208500 RAYADO CREEK AT SAUBLE RANCH, NEAR CIMARRON, N. MEX.

LOCATION.--Lat 36°22'20", long 104°58'10", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on right bank at Sauble Ranch (Carson-Maxwell Base Camp of Philmont Scout Ranch), 2.5 mi upstream from State Highway 21, 4.0 mi downstream from Bonito Creek, and 9.8 mi southwest of Cimarron.

DRAINAGE AREA.--65 mi^2.

REMARKS.--Used as an index station. No diversion above station.

07211000 CIMARRON RIVER AT SPRINGER, N. MEX.

LOCATION.--Lat 36°21'37", long 104°35'53", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on left bank at Springer, 400 ft downstream from bridge on State Highway 199, 0.3 mi upstream from Salado Creek, and at mile 8.2.

DRAINAGE AREA.--1,032 mi^2.

REMARKS.--Used as an index station. Flow affected by storage in Eagle Nest Lake and other reservoirs and by diversions for irrigation of about 23,000 acres above station.

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Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07211500 CANADIAN RIVER NEAR TAYLOR SPRINGS, N. MEX.

LOCATION.--Lat 36°17'49", long 104°29'36", in NW¼SE¼ sec.21, T.24 N., R.23 E., Colfax County, Hydrologic Unit 11080003, on left bank at head of gorge, 2.0 mi south of Taylor Springs, 2.3 mi downstream from Cimarron River, 2.4 mi upstream from Chico Creek, 7.1 mi southeast of Springer, and at mile 847.9.

DRAINAGE AREA.--2,850 mi^2.

REMARKS.--Extended to base period by station 07221500. Diversions for irrigation of about 30,000 acres above station.

0721400 CANADIAN RIVER NEAR ROY, N. MEX.

LOCATION.--Lat 35°55'10", long 104°21'10", in E½ sec.35, T.20 N., R.24 E., Mora County, Hydrologic Unit 11080003, on right bank 1,080 ft upstream from bridge on State Highway 120, and 9 mi west of Roy.

DRAINAGE AREA.--4,066 mi^2 of which 107 mi^2 is probably noncontributing.

REMARKS.--Extended to base period by station 07221500. Diversions for irrigation of about 30,000 acres above station.

07214500 MORA RIVER NEAR HOLMAN, N. MEX.

LOCATION.--Lat 36°06'37", long 105°22'33", Mora County, Hydrologic Unit 11080004, in Mora Grant, on right bank 330 ft downstream from bridge, 2.4 mi south of Chacon, 4.5 mi downstream from confluence of Luna and Lujan Creeks, 5.0 mi north of Holman, 8.0 mi southwest of Guadalupita, and at mile 106.9.

DRAINAGE AREA.--57 mi^2.

REMARKS.--Extended to base period by station 07216500. Diversions for irrigation of about 1,600 acres above station.

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Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07214800 RIO LA CASA NEAR CLEVELAND, N. MEX.

LOCATION.--Lat 35°58'27", long 105°23'19", Mora County, in Mora Grant, Hydrologic Unit 11080004, on left bank 1.6 mi southwest of Cleveland, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--23.0 mi^2.

REMARKS.--Extended to base period by station 08378500. Diversions for irrigation of about 100 acres above station.

07216500 MORA RIVER NEAR GOLONDRINAS, N. MEX.

LOCATION.--Lat 35°53'27", long 105°09'47", Mora County, Hydrologic Unit 11080004, in Mora Grant, on right bank, 0.7 mi upstream from bridge on State Highway 160, 1.2 mi east of Golondrinas, 1.9 mi upstream from Coyote Creek, 4.7 mi downstream from Rito Cebolla, and at mile 75.8.

DRAINAGE AREA.--267 mi^2.

REMARKS.--Used as an index station. Diversions for irrigation of about 12,000 acres above station.

07217000 COYOTE CREEK BELOW BLACK LAKE, N. MEX.

LOCATION.--Lat 36°16'20", long 105°14'50", in NW¼ sec.23, T.14 N., R.16 E., Colfax County, Hydrologic Unit 11080004, on right bank 150 ft downstream from road crossing, 0.25 mi downstream from Black Lake, 2 mi south of Black Lake Village, and 12 mi south of Agua Fria.

DRAINAGE AREA.--48 mi^2.

REMARKS.--Extended to base period by station 07208500. Curve is poorly defined above 60 ft^3/s and below 1.0 ft^3/s. Flow is partly regulated at an open flume in outlet from Black Lake. Diversions for irrigation of several hundred acres above station. Surface waste from a small ditch enters stream above station.

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Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07217100 COYOTE CREEK ABOVE GUADALUPITA, N. MEX.

LOCATION.--Lat 36°09'51", long 105°13'49", Mora County, in Mora Grant, Hydrologic Unit 11080004, on right bank 1.8 mi north of Guadalupita and at mile 21.2.

DRAINAGE AREA.--71 mi^2.

REMARKS.--Extended to base period by station 07218000. Diversions for irrigation of about 2,000 acres above station.

07218000 COYOTE CREEK NEAR GOLONDRINAS, N. MEX.

LOCATION.--Lat 35°55'00", long 105°09'49", Mora County, Hydrologic Unit 11080004, in Mora Grant, on left bank 0.5 mi downstream from Coyote Creek damsite, 2.3 mi northeast of Golondrinas, and at mile 2.7.

DRAINAGE AREA.--215 mi^2.

REMARKS.--Used as an index station. Diversions (including off-channel storage) for irrigation of about 4,000 acres above station.

07220000 SAPELLO RIVER AT SAPELLO, N. MEX.

LOCATION.--Lat 35°46'11", long 105°15'05", San Miguel County, in Mora Grant, Hydrologic Unit 11080004, on downstream end of bridge pier nearest left bank, on State Highway 3, in Sapello, 0.5 mi downstream from Manuelitas Creek, and at mile 20.3.

DRAINAGE AREA.--132 mi^2.

REMARKS.--Extended to base period by station 07216500. Diversions above station for irrigation of about 4,200 acres. Sapello Canal diverts from right bank 500 ft above station.

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Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07221000 MORA RIVER NEAR SHOEMAKER, N. MEX.

LOCATION.--Lat 35°48'01", long 104°46'58", Mora County, Hydrologic Unit 11080004, in Mora Grant, on left bank 5.5 mi east of Shoemaker, 12.3 mi upstream from Pedroso Creek, and at mile 39.4.

DRAINAGE AREA.--1,104 mi^2, of which 71 mi^2 is probably noncontributing.

REMARKS.--Diversions for irrigation of about 26,000 acres above station. Off-channel lakes make it possible to divert and store water during non-irrigation season.

07221500 CANADIAN RIVER NEAR SANCHEZ, N. MEX.

LOCATION.--Lat 35°39'08", long 104°22'39", in SW¼ sec.34, T.17 N., R.24 E., San Miguel County, Hydrologic Unit 11080003 on right bank 1,000 ft downstream from bridge on State Highway 65, 0.9 mi upstream from Lagartija Creek, 3.2 mi northeast of Sanchez, 10 mi downstream from Mora River, 25 mi southwest of Mosquero, and at mile 777.0.

DRAINAGE AREA.--6,015 mi^2, of which 303 mi^2 is probably noncontributing.

REMARKS.--Used as an index station. Records for station 07222000, for water years 1931-36, were used to complete base period. Diversions for irrigation of about 56,000 acres above station.

07222500 CONCHAS RIVER AT VARIADERO, N. MEX.

LOCATION.--Lat 35°24'10", long 104°26'35", in NE¼NE¼ sec. 36, T.14N., R.23 E., San Miguel County, Hydrologic Unit 11080005, on left bank 1.5 mi northeast of Variadero, 14 mi west of Conchas Dam, and at mile 15.0.

DRAINAGE AREA.--523 mi^2, of which 130 mi^2 is probably noncontributing.

REMARKS.--Extended to base period by station 07221500. Diversions for irrigation of about 300 acres above station.

Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - continued

07226500 UTE CREEK NEAR LOGAN, N. MEX.

LOCATION.--Lat 35°26'18", long 103°31'31", in NW¼SE¼ sec.15, T.14 N., R.32 E., Harding County, Hydrologic Unit 11080007, on right bank 1.9 mi downstream from Alamosa Creek, 4.5 mi upstream from State Road 155, 4.7 mi upstream from high-water line of Ute Reservoir, 8.2 mi northwest of Logan, and at mile 10.0.

DRAINAGE AREA.--2,060 mi^2, of which 617 mi^2 is probably noncontributing.

REMARKS.--Flow-duration records poor. Diversions for irrigation of a few hundred acres above station.

07227100 REVUELTO CREEK NEAR LOGAN, N. MEX.

LOCATION.--Lat 35°20'28", long 103°23'40", in SW¼NW¼ sec.24, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080008, on right bank 0.3 mi upstream from bridge on State Highway 39, 1.9 mi southeast of Logan, and at mile 2.3.

DRAINAGE AREA.--786 mi^2.

REMARKS.--Data presented for period of record only. Since 1939 low flows supplemented by surface and ground water return from irrigation in vicinity of Tucumcari.

07227200 TRAMPEROS CREEK NEAR STEAD, N. MEX.

LOCATION.--Lat 36°04'15", long 103°12'10", in NW¼NW¼ sec.10, T.21 N., R.35 E., Union County, Hydrologic Unit 11190102, at downstream end of bridge pier on State Highway 18, 2.1 mi south of Stead, 3.2 mi downstream from Pinabetes Creek, 17.8 mi upstream from New Mexico-Texas State line, and 26 mi south of Clayton.

DRAINAGE AREA.--556 mi^2, approximately.

REMARKS.--Extended to base period by station 07154500. Minor regulation by detention reservoirs and stock ponds.

Table 3.--Gaging station descriptions - Continued

ARKANSAS RIVER BASIN - concluded

07232500 BEAVER RIVER NEAR GUYMON, OKLA.

LOCATION.--Lat 36°43'24", long 101°29'30", in NW¼SW¼ sec.18, T.3 N., R.15 E., Texas County, Hydrologic Unit 11100101, near center span on downstream side of pier of bridge on U.S. Highway 64, 1.2 mi upstream from Goff Creek, 2.5 mi north of Guymon, Okla., and at mile 650.7.

DRAINAGE AREA.--2,139 mi^2 includes that of Dry Sand Draw, of which 964 mi^2 is probably noncontributing.

REMARKS.--Extended to base period by station 07221500.

RIO GRANDE BASIN

08251500 RIO GRANDE NEAR LOBATOS, COLO.

LOCATION.--Lat 37°04'42", long 105°45'22", in sec.22, T.33 N., R.11 E., Conejos County, Hydrologic Unit 13010002, on right bank at highway bridge, 6 mi north of Colorado-New Mexico State line, 7 mi downstream from Culebra Creek, 10 mi east of Lobatos, 14 mi east of Antonito and at mile 1,722.1.

DRAINAGE AREA.--7,700 mi^2, approximately, including 2,940 mi^2 in closed basin in northern part of San Luis Valley, Colo.

REMARKS.--Used as an index station. Flow affected by changing conditions upstream mostly prior to 1930. Flow affected by transmountain diversions, storage reservoirs, ground water withdrawals, and diversions for irrigation. The average discharge for the period 1902, 1910-12, 1915-30 is more than twice the average for 1931-73.

08263000 LATIR CREEK NEAR CERRO, N. MEX.

LOCATION.--Lat 36°49'45", long 105°32'50", in SW¼SW¼ sec.15, T.30 N., R.13 E., Taos County, Hydrologic Unit 13020101, in Carson National Forest, on right bank at mouth of canyon, 100 ft upstream from heading of Cerro community ditch, and 6.3 mi northeast of Cerro.

DRAINAGE AREA.--10.5 mi^2.

REMARKS.--Extended to base period by station 08267500. Records represent natural flow.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08263500 RIO GRANDE NEAR CERRO, N. MEX.

LOCATION.--Lat 36°44'24", long 105°40'59", in NW¼NE¼ sec.20, T.29 N., R.12 E., Taos County, Hydrologic Unit 13020101, on left bank 4 mi southwest of Cerro, 5.5 mi northwest of Questa, 7.4 mi upstream from Red River, and at mile 1,693.1.

DRAINAGE AREA.--8,440 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--Extended to base period by station 08251500. Diversions above station for irrigation of about 620,000 acres in Colorado and 7,000 acres in New Mexico.

08264000 RED RIVER NEAR RED RIVER, N. MEX.

LOCATION.--Lat 36°37'30", long 105°23'20", in NE¼ sec.36, T.28 N., R.14 E. (projected), Taos County, Hydrologic Unit 13020101, on right bank 100 ft downstream from confluence of Middle and East Forks, and 6 mi south of Red River.

DRAINAGE AREA.--19.1 mi^2.

REMARKS.--Extended to base period by station 08267500. Records represent natural flow.

08264500 RED RIVER BELOW ZWERGLE DAMSITE, NEAR RED RIVER, N. MEX.

LOCATION.--Lat 36°40'25", long 105°22'45", in NE¼SW¼ sec.7, T.28 N., R.15 E. (projected), Taos County, Hydrologic Unit 13020101 in Carson National Forest, on right bank 2,000 ft upstream from Goose Creek, 1.9 mi downstream from Bear Canyon, 2.6 mi southeast of Red River, and at mile 24.1.

DRAINAGE AREA.--25.7 mi^2.

REMARKS.--Extended to base period by station 08267500. No diversion above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08265000 RED RIVER NEAR QUESTA, N. MEX.

LOCATION.--Lat 36°42'12", long 105°34'04", in NE¼SE¼ sec.32, T.29 N., R.13 E. (projected), Taos County, Hydrologic Unit 13020101, in Carson National Forest, on left bank 1.3 mi upstream from Cabresto Creek, 1.5 mi east of Questa, and at mile 9.0.

DRAINAGE AREA.--113 mi^2.

REMARKS.--The Molybdenum Corporation of America's tailings pipeline, which bypasses station, caused a change in surface flow beginning in January 1966. Extended to base period by station 08267500 for the two different conditions. Flow duration data for 1942 added manually. South ditch diverts from left bank 1,500 ft upstream and bypasses station. Diversions for irrigation of a few hundred acres above station.

08266000 CABRESTO CREEK NEAR QUESTA, N. MEX.

LOCATION.--Lat 36°43'50", long 105°33'12", in SE¼SE¼ sec.21, T.29 N., R.13 E., Taos County, Hydrologic Unit 13020101, in Carson National Forest, on right bank 900 ft downstream from Llano ditch heading, 2.6 mi downstream from Lake Fork, 3 mi northeast of Questa, and at mile 3.5.

DRAINAGE AREA.--36.7 mi^2.

REMARKS.--Extended to base period by station 08267500. Llano ditch (station 08265500), the only diversion above station, diverts from right bank 900 ft above gage for irrigation of about 800 acres below. Flow regulated by Cabresto Reservoir (capacity, 732 acre-feet, after reconstruction in 1928) on Lake Fork 1 mi above mouth.

08267000 RED RIVER AT MOUTH, NEAR QUESTA, N. MEX.

LOCATION.--Lat 36°38'53", long 105°41'34", in SW¼NW¼ sec.20, T.28 N., R.12 E., Taos County, Hydrologic Unit 13020101, in Carson National Forest, on left bank 250 ft upstream from Rio Grande, and 6.5 mi southwest of Questa.

DRAINAGE AREA.--190 mi^2.

REMARKS.--Extended to base period by station 08267500. Diversions for irrigation of about 3,000 acres above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08267500 RIO HONDO NEAR VALDEZ, N. MEX.

LOCATION.--Lat 36°32'30", long 105°33'21", Taos County, Hydrologic Unit 13020101, in Carson National Forest, on right bank 500 ft upstream from first diversion, 1.6 mi east of Valdez, 3.8 mi downstream from South Fork, and at mile 9.2.

DRAINAGE AREA.--36.2 mi^2.

REMARKS.--Extended to base period by stations 08276000 and 08276500. No diversions above station.

08268500 ARROYO HONDO AT ARROYO HONDO, N. MEX.

LOCATION.--Lat 36°31'56", long 105°41'06", Taos County, Hydrologic Unit 13020101, in Arroyo Hondo Grant, on left bank 0.9 mi downstream from Arroyo Hondo, and at mile 1.4.

DRAINAGE AREA.--65.6 mi^2.

REMARKS.--Flow-duration data for water years 1931-32 estimated on basis of data for station 08276500 and relationship curve. Diversions above station for irrigation of about 2,500 acres.

08268700 RIO GRANDE NEAR ARROYO HONDO, N. MEX.

LOCATION.--Lat 36°32'04", long 105°42'34", in NW¼ sec.31, T.27 N., R.12 E., Taos County, Hydrologic Unit 13020101, on right bank 350 ft downstream from Arroyo Hondo, 400 ft downstream from bridge on county road, 2.2 mi west of Arroyo Hondo, 11.6 mi northwest of Taos, and at mile 1,677.4.

DRAINAGE AREA.--8,760 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--Extended to base period by station 08276500. Diversions above station for irrigation of about 620,000 acres in Colorado and 15,000 acres in New Mexico.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08269000 RIO PUEBLO DE TAOS NEAR TAOS, N. MEX.

LOCATION.--Lat 36°26'22", long 105°30'11", in SW¼SE¼ sec.36, T.26 N., R.13 E., Taos County, Hydrologic Unit 13020101, in Taos Pueblo Grant, on right bank 2.3 mi east of Taos Pueblo, 4.5 mi northeast of Taos, 5.8 mi upstream from Rio Lucero, and at mile 15.1.

DRAINAGE AREA.--66.6 mi^2.

REMARKS.--Extended to base period by station 08267500. No diversions above station.

08271000 RIO LUCERO NEAR ARROYO SECO, N. MEX.

LOCATION.--Lat 36°30'30", long 105°31'49", Taos County, Hydrologic Unit 13020101, in Tract C Taos Pueblo Grant, on right bank 200 ft upsteam from diversion dam for Tenorio and Indian ditches, 2.2 mi east of Arroyo Seco, 7.4 mi northeast of Taos, and at mile 8.1.

DRAINAGE AREA.--16.6 mi^2.

REMARKS.--Extended to base period by station 08267500. No diversions above station.

08275000 RIO FERNANDO DE TAOS NEAR TAOS, N. MEX.

LOCATION.--Lat 36°22'32", long 105°32'55", in W½NW¼ sec.27, T.25 N., R.13 E., Taos County, Hydrologic Unit 13020101, in Carson National Forest, on right bank 175 ft upstream from Acequia Madre del Norte del Canon, 2.5 mi southeast of Taos, and at mile 5.0.

DRAINAGE AREA.--71.7 mi^2.

REMARKS.--Extended to base period by station 08267500. A few very small diversions above station for irrigation.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08275300 RIO PUEBLO DE TAOS NEAR RANCHITO, N. MEX.

LOCATION.--Lat 36°23'38", long 105°37'23", Taos County, Hydrologic Unit 13020101, in Gijosa Grant, on left bank 1,100 ft downstream from Rio Fernando de Taos, 1.6 mi southwest of Ranchito, and at mile 7.9.

DRAINAGE AREA.--199 mi^2.

REMARKS.--Extended to base period by station 08276000. Diversions for irrigation of about 9,000 acres above station.

08275500 RIO GRANDE DEL RANCHO NEAR TALPA, N. MEX.

LOCATION.--Lat 36°17'52", long 105°34'55", Taos County, Hydrologic Unit 13020101, in Carson National Forest, Rancho del Rio Grande Grant, on left bank 1.4 mi downstream from Rito de la Olla (locally known as Pot Creek), 3.2 mi south of Talpa, 4.3 mi upstream from Rio Chiquito, and at mile 6.9.

DRAINAGE AREA.--83 mi^2, approximately.

REMARKS.--Extended to base period by station 08267500. Minor diversions for irrigation above station.

08275600 RIO CHIQUITO NEAR TALPA, N. MEX.

LOCATION.--Lat 36°19'55", long 105°34'42", Taos County, Hydrologic Unit 13020101, in Carson National Forest, Rancho del Rio Grande Grant, on right bank 1 mi southeast of Talpa, and at mile 2.1.

DRAINAGE AREA.--37.0 mi^2.

REMARKS.--Extended to base period by station 08275500. No diversions above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08276000 RIO PUEBLO DE TAOS AT LOS CORDOVAS, N. MEX.

LOCATION.--Lat 36°23'30", long 105°38'00", in N½ sec.23, T.25 N., R.12 E. (projected), Taos County, Hydrologic Unit 13020101, in Martinez Grant, on left bank 200 ft downstream from Rio Grande del Rancho, 0.5 mi northeast of Los Cordovas, and 3.5 mi west of Taos.

DRAINAGE AREA.--359 mi^2.

REMARKS.--Used as an index station; extended to base period by correlation with station 08276300, 3 mi downstream. Diversions for irrigation of about 12,000 acres above station.

08276300 RIO PUEBLO DE TAOS BELOW LOS CORDOVAS, N. MEX.

LOCATION.--Lat 36°22'39", long 105°40'05", Taos County, Hydrologic Unit 13020101, in Gijosa Grant, on left bank 1.9 mi southwest of Los Cordovas, 2.5 mi downstream from Rio Grande del Rancho, and at mile 5.1.

DRAINAGE AREA.--380 mi^2.

REMARKS.--Extended to base period by station 08276000. Diversions for irrigation of about 12,000 acres above station.

08276500 RIO GRANDE BELOW TAOS JUNCTION BRIDGE, NEAR TAOS, N. MEX.

LOCATION.--Lat 36°19'12", long 105°45'14", in NW¼NE¼ sec.15, T.24 N., R.11 E., Taos County, Hydrologic Unit 13020101, on left bank 1.7 mi downstream from bridge on State Highway 96, 2.0 mi downstream from Rio Pueblo de Taos, 11.8 mi southwest of Taos, and at mile 1,657.7.

DRAINAGE AREA.--9,730 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--Used as an index station. Diversions above station for irrigation of about 620,000 acres in Colorado and 30,000 acres in New Mexico.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08278500 RIO SANTA BARBARA NEAR LLANO, N. MEX.

LOCATION.--Lat 36°06'40", long 105°37'55", in E½ sec.26, T.22 N., R.12 E. (projected), Taos County, in Santa Barbara Grant, Hydrologic Unit 13020101, on right bank 3.5 mi southeast of Llano, and 5.3 mi southeast of Penasco.

DRAINAGE AREA.--38 mi^2, approximately.

REMARKS.--Extended to base period by stations 08292000 and 08378500. Records represent natural flow.

08279000 EMBUDO CREEK AT DIXON, N. MEX.

LOCATION.--Lat 36°12'39", long 105°54'47", in NE¼SE¼ sec.19, T.23 N., R.10 E., Rio Arriba County, Hydrologic Unit 13020101, on right bank 750 ft upstream from U.S. Highway 64, 0.5 mi upstream from mouth, 0.5 mi east of Embudo Post Office, and 1.7 mi northwest of Dixon.

DRAINAGE AREA.--305 mi^2.

REMARKS.--Extended to base period by station 08276000. Diversions above station for irrigation of about 6,500 acres, a small part of which is below gage.

08279500 RIO GRANDE AT EMBUDO, N. MEX.

LOCATION.--Lat 36°12'20", long 105°57'49", in SW¼SW¼ sec.23, T.23 N., R.9 E., Rio Arriba County, Hydrologic Unit 13020101, on right bank 0.2 mi downstream from bridge at Embudo, 2.8 mi downstream from Embudo Creek, and at mile 1,643.1.

DRAINAGE AREA.--10,400 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--Used as an index station. Diversions above station for irrigation of about 620,000 acres in Colorado and 40,000 acres in New Mexico. Records collected during the base period are considered homogeneous; those collected prior to about 1928 are nonhomogeneous because of increasing depletions.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08281100 RIO GRANDE ABOVE SAN JUAN PUEBLO, N. MEX.

LOCATION.--Lat 36°03'58", long 106°04'34", in NE¼SE¼ sec.10, T.21 N., R.8 E., Rio Arriba County, Hydrologic Unit 13020101, in San Juan Pueblo Grant, on left bank 0.8 mi upstream from bridge on State Highway 74, 1.0 mi northwest of San Juan Pueblo, 1.8 mi upstream from Rio Chama, 5.1 mi north of Espanola, and at mile 1,630.1.

DRAINAGE AREA.--10,550 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--Extended to base period by station 08279500. Diversions above station for irrigation of about 620,000 acres in Colorado and 42,000 acres in New Mexico. San Juan lateral and San Juan Pueblo ditch, both on left bank, and Guique ditch, on right bank, bypass gage for irrigation of several hundred acres below station.

08283500 RIO CHAMA AT LOS OJOS, N. MEX.

LOCATION.--Lat 36°44'15", long 106°34'40", Rio Arriba County, in Tierra Amarilla Grant, Hydrologic Unit 13020102, at downstream end of bridge pier nearest right bank on State Highway 51, just below mouth of Rio Brazos, and 0.5 mi northwest of Los Ojos (formerly Park View).

DRAINAGE AREA.--405 mi^2.

REMARKS.--Extended to base period by station 09350500. Data for base period correlated with similar data for station 08284100. Diversions for irrigation of about 7,000 acres above station.

08284100 RIO CHAMA NEAR LA PUENTE, N. MEX.

LOCATION.--Lat 36°39'45", long 106°37'57", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on right bank 0.7 mi downstream from Rito de Tierra Amarilla, 3.1 mi southwest of La Puente, 6.7 mi upstream from flow line of El Vado Reservoir, and at mile 91.4.

DRAINAGE AREA.--480 mi^2, approximately.

REMARKS.--Extended to base period by station 09350500. Data for base period correlated with that for station 08283500. Diversions for irrigation of about 10,300 acres above station (1962 determination).

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08284200 WILLOW CREEK ABOVE HERON RESERVOIR, NEAR LOS OJOS, N. MEX.

LOCATION.--Lat 36°44'33", long 106°37'34", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on right bank 200 ft downstream from bridge, 0.2 mi downstream from Iron Spring Creek, 3.3 mi west of Los Ojos, and at mile 9.7.

DRAINAGE AREA.--112 mi^2.

REMARKS.--There is no reliable basis for extension to base period.

08284300 HORSE LAKE CREEK ABOVE HERON RESERVOIR, NEAR LOS OJOS, N. MEX.

LOCATION.--Lat 36°42'24", long 106°44'42", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on right bank 3.7 mi northwest of Heron Dam, 7.8 mi downstream from Horse Lake, and 9.9 mi west of Los Ojos.

DRAINAGE AREA.--45 mi^2, approximately.

REMARKS.--Extended to base period by station 08284100. Diversions above station for irrigation of meadows and for off-channel stock tanks.

08284500 WILLOW CREEK NEAR LOS OJOS, N. MEX.

LOCATION.--Lat 36°40'05", long 106°42'15", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, at Heron damsite, 0.7 mi downstream from Horse Lake Creek, 8.6 mi southwest of Los Ojos (Park View), and at mile 0.4.

DRAINAGE AREA.--193 mi^2.

REMARKS.--Not extended to base period. Flow-duration data for water years 1941-42 added manually after estimating missing days during winter months. Flow-duration data presented for two periods of record because of what appears to be a change in conditions at low flow after 1963. Cause of increase is unknown; however, water is imported from Rio Chama for irrigation above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08285500 RIO CHAMA BELOW EL VADO DAM, N. MEX.

LOCATION.--Lat 36°34'48", long 106°43'24", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on left bank 1.5 mi downstream from El Vado Dam, 2.8 mi upstream from Rio Nutrias, 13 mi southwest of Tierra Amarilla, and at mile 76.2.

DRAINAGE AREA.--877 mi^2, of which about 100 mi^2 is probably noncontributing.

REMARKS.--Data represents regulated flow. Rehabilitation of outlet works, completed in December 1966, increased maximum valve-controlled release from about 1,750 ft^3/s to about 6,000 ft^3/s. Since May 1971 flow affected by release of transmountain water.

08286500 RIO CHAMA ABOVE ABIQUIU RESERVOIR, N. MEX.

LOCATION.--Lat 36°19'06", long 106°35'50", Rio Arriba County, Hydrologic Unit 13020102, on left bank 40 ft downstream from site of former bridge, 7.7 mi downstream from Rio Gallina, 9 mi northwest of Youngsville, 15.6 mi upstream from Abiquiu Dam, 30.3 mi downstream from El Vado Dam, and at mile 47.4.

DRAINAGE AREA.--1,600 mi^2, of which about 100 mi^2 is probably noncontributing.

REMARKS.--Flow regulated by El Vado Reservoir (station 08285000). Since May 1971 flow affected by release of transmountain water from Heron Reservoir (station 08284510). Diversions for irrigation of about 15,000 acres above station.

08288000 EL RITO NEAR EL RITO, N. MEX.

LOCATION.--Lat 36°23'30", long 106°14'20", in NW¼ sec.19, T.25 N., R.7 E., Rio Arriba County, Hydrologic Unit 13020102, 0.75 mi upstream from boundary of Carson National Forest, and 4.3 mi northwest of El Rito.

DRAINAGE AREA.--49.8 mi^2.

REMARKS.--Extended to base period by station 08283500. Diversions for irrigation of less than 100 acres above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08289000 RIO OJO CALIENTE AT LA MADERA, N. MEX.

LOCATION.--Lat 36°20'59", long 106°02'37", in NW¼NE¼ sec.1, T.24 N., R.8 E., Rio Arriba County, Hydrologic Unit 13020102, on left bank 400 ft upstream from bridge on State Highway 96, 2.4 mi south of La Madera, 2.6 mi downstream from confluence of Rio Vallecitos and Rio Tusas, 3.1 mi north of Ojo Caliente, and at mile 19.9.

DRAINAGE AREA.--419 mi^2.

REMARKS.--Used as an index station; extended to base period by estimating flow-duration data for 1931-32 on basis of records for station 08283500 and curve of relationship for period 1933-55. Flow-duration data for base period correlated with that for station 08288000. Diversions above station for irrigation of about 3,500 acres.

08290000 RIO CHAMA NEAR CHAMITA, N. MEX.

LOCATION.--Lat 36°04'26", long 106°06'40", in NE¼NE¼ sec.8, T.21 N., R.8 E., Rio Arriba County, Hydrologic Unit 13020102, in San Juan Pueblo Grant, at downstream end of pier nearest left bank of bridge on U.S. Highway 285, 0.5 mi west of Chamita, 2.5 mi northwest of San Juan Pueblo, and at mile 2.8.

DRAINAGE AREA.--3,144 mi^2, of which about 100 mi^2 is probably noncontributing.

REMARKS.--Flow regulated since 1935 by El Vado Dam and since 1963 by Abiquiu Dam. Many factors have affected pattern of regulation. Diversions for irrigation of about 27,600 acres above station.

08291000 SANTA CRUZ RIVER AT CUNDIYO, N. MEX.

LOCATION.--Lat 35°57'53", long 105°54'14", in SE¼NW¼ sec.17, T.20 N., R.10 E., Santa Fe County, Hydrologic Unit 13020101, on left bank 135 ft downstream from bridge on State Highway 4, 200 ft downstream from confluence of Rio Medio and Rio Frijoles, 0.6 mi northwest of Cundiyo, 1.8 mi upstream from Santa Cruz Dam, and at mile 11.9.

DRAINAGE AREA.--86 mi^2, approximately.

REMARKS.--Used as an index station. Daily discharge for December 1930 and 1931 and January 1932 estimated to complete base period. Flow-duration data for water years 1931-32 computed manually. Correlated with station 08378500. Diversions for irrigation of about 1,000 acres above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08292000 SANTA CLARA CREEK NEAR ESPANOLA, N. MEX.

LOCATION.--Lat 35°58'40", long 106°10'20", in SW¼SW¼ sec.11, T.20 N., R.7 E., Rio Arriba County, Hydrologic Unit 13020101, 5.5 mi upstream from mouth, and 5.5 mi southwest of Espanola.

DRAINAGE AREA.--34.5 mi^2.

REMARKS.--Data presented for period of record only. The shape of the flow-duration curve for the short period of record is significantly different from that for any other nearby station. Two small diversions for irrigation above station.

08294300 RIO NAMBE AT NAMBE FALLS, NEAR NAMBE, N. MEX.

LOCATION.--Lat 35°50'46", long 105°54'29", in NW¼SW¼ sec.29, T.19 N., R.10 E., Santa Fe County, Hydrologic Unit 13020101, in Nambe Indian Reservation, on left bank 800 ft downstream from Nambe Falls, 1,100 ft downstream from Nambe Falls Dam, 2.4 mi upstream from confluence of Rio Nambe and Rio En Medio, 4.2 mi southeast of Nambe Pueblo and 5.2 mi southeast of Nambe.

DRAINAGE AREA.--34.2 mi^2, revised.

REMARKS.--Extended to base period by station 08291000. No diversions above station.

08295000 RIO NAMBE NEAR NAMBE, N. MEX.

LOCATION.--Lat 35°51'35", long 105°56'05", in SE¼ sec.24, T.19 N., R.9 E., Santa Fe County, Hydrologic Unit 13020101, in Nambe Pueblo Grant, 1,000 ft downstream from diversion dam for Nambe Canal, 2.5 mi southeast of Nambe Pueblo and 6.5 mi upstream from Rio Tesuque.

DRAINAGE AREA.--38.2 mi^2.

REMARKS.--Extended to base period by station 08291000. Nambe Canal diverts water upstream and bypasses station with an average flow of about 0.7 ft^3/s.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08302200 NORTH FORK TESUQUE CREEK NEAR SANTA FE, N. MEX.

LOCATION.--Lat 35°46'12", long 105°48'31", Santa Fe County, Hydrologic Unit 13020101, in Santa Fe National Forest, on left bank 60 ft upstream from culvert on State Highway 475, 250 ft upstream from Middle Fork Tesuque Creek and 9.2 mi northeast of Santa Fe.

DRAINAGE AREA.--1.60 mi^2.

REMARKS.--Extended to base period by station 08378500.

08302500 TESUQUE CREEK ABOVE DIVERSIONS, NEAR SANTA FE, N. MEX.

LOCATION.--Lat 35°44'20", long 105°54'20", in NW¼ sec.5, T.17 N., R.10 E., Santa Fe County, Hydrologic Unit 13020101, 1.0 mi upstream from Little Tesuque Creek, and 4.0 mi northeast of Santa Fe.

DRAINAGE AREA.--11.7 mi.

REMARKS.--Extended to base period by station 08291000. No diversions above station.

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, N. MEX.

LOCATION.--Lat 35°52'29", long 106°08'30", in SW¼SW¼ sec.18, T.19 N., R.8 E., Santa Fe County, Hydrologic Unit 13020101, in San Ildefonso Pueblo Grant, near right bank on downstream end of pier of former railway bridge, 400 ft downstream from bridge on State Highway 4, 1.8 mi southwest of San Ildefonso Pueblo, 2.5 mi downstream from Pojoaque River, 6.8 mi west of Pojoaque, and at mile 1,614.2.

DRAINAGE AREA.--14,300 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--Flow-duration data is presented for period of record and for period 1965-73. Storage for flood control in Abiquiu Reservoir began in 1965 and since May 1971 flow affected by releases of transmountain water. Flow-duration data as presented for this station is of little value in predicting variability of flow in future because of the many changes that have occurred during the periods of record.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08318000 GALISTEO CREEK AT DOMINGO, N. MEX.

LOCATION.--Lat 35°30'43", long 106°19'01", in SW¼SW¼ sec.21, T.15 N., R.6 E., Sandoval County, Hydrologic Unit 13020201, in Santo Domingo Pueblo Grant, on left bank 160 ft downstream from highway bridge, 0.2 mi northeast of Domingo, 2.8 mi east of Santo Domingo Pueblo, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--640 mi^2, approximately.

REMARKS.--Data presented for period of record only. Since 1968 flow partly regulated by Galisteo Reservoir.

08319000 RIO GRANDE AT SAN FELIPE, N. MEX.

LOCATION.--Lat 35°26'39", long 106°26'23", in SW¼NW¼ sec.17, T.14 N., R.5 E., Sandoval County, Hydrologic Unit 13020201 in San Felipe Grant, on right bank 200 ft downstream from Tonque Arroyo, 1,700 ft upstream from steel highway bridge, 0.8 mi upstream from San Felipe Pueblo, 11 mi northeast of Bernalillo, and at mile 1,572.7.

DRAINAGE AREA.--16,100 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--The pattern of regulation was not consistent during the base period. Flow regulated by Cochiti Dam since November 1973. Station bypassed by two ditches on left bank.

08321500 JEMEZ RIVER BELOW EAST FORK, NEAR JEMEZ SPRINGS, N. MEX.

LOCATION.--Lat 35°49'39", long 106°38'52", in NW¼ sec.5, T.18 N., R.3 E., Sandoval County, Hydrologic Unit 13020202, on left bank 0.4 mi downstream from East Fork and boundary of Santa Fe National Forest, 5.3 mi northeast of Jemez Springs, and at mile 43.0.

DRAINAGE AREA.--173 mi^2.

REMARKS.--Extended to base period by station 08289000. No diversion above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08323000 RIO GUADALUPE AT BOX CANYON, NEAR JEMEZ, N. MEX.

LOCATION.--Lat 35°43'52", long 106°45'44", Sandoval County, Hydrologic Unit 13020202, in Canon de San Diego Grant, on left bank at downstream end of Guadalupe Box Canyon, 4.8 mi upstream from mouth, 5 mi southwest of Jemez Springs, and 7 mi north of Jemez.

DRAINAGE AREA.--235 mi^2.

REMARKS.--Extended to base period by station 08289000. Records collected at station 08323500 are now considered equivalent and flow-duration data for water years 1939-42, 1950 were added. Minor regulation by San Gregorio Reservoir since 1958.

08324000 JEMEZ RIVER NEAR JEMEZ, N. MEX.

LOCATION.--Lat 35°39'42", long 106°44'34", Sandoval County, Hydrologic Unit 13020202, in Canyon de San Diego Grant, on left bank 0.7 mi downstream from Rio Guadalupe, 3.5 mi north of Jemez, and at mile 29.5.

DRAINAGE AREA.--470 mi^2.

REMARKS.--Extended to base period by station 08289000. Diversions for irrigation of about 300 acres above station.

08329500 RIO GRANDE NEAR BERNALILLO, N. MEX.

LOCATION.--Lat 35°17'05", long 106°35'45", Sandoval County, Hydrologic Unit 13020203, on right bank 2.0 mi northwest of Sandia Pueblo, 3.0 mi southwest of Bernalillo, 3.5 mi downstream from State Highway 44, and 8.5 mi downstream from Jemez River.

DRAINAGE AREA.--17,300 mi^2, approximately, including 2,940 mi^2 in closed basin in Colorado.

REMARKS.--Not extended to base period because of changing pattern of regulation upstream. Albuquerque main canal bypasses station on left bank.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08329900 NORTH FLOODWAY CHANNEL NEAR ALAMEDA, N. MEX.

LOCATION.--Lat 35°11'58", long 106°35'53", Bernalillo County, Hydrologic Unit 13020203, in Elena Gallegos Grant, on left bank 0.5 mi upstream from Edith Blvd., 1.1 mi upstream from mouth, and 1.2 mi northeast of Alameda.

DRAINAGE AREA.--Not determined.

REMARKS.--Data presented for period of record only. Floodway channel intercepts flow of numerous arroyos in northeast Albuquerque and discharges into the Rio Grande at a point 1.6 mi north of Alameda.

08330000 RIO GRANDE AT ALBUQUERQUE, N. MEX.

LOCATION.--Lat 35°05'21", long 106°40'48", Bernalillo County, Hydrologic Unit 13020203, in Atrisco Grant, at downstream side of Old Town Bridge on U.S. Highway 66 at Albuquerque, and at mile 1,540.0.

DRAINAGE AREA.--17,440 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--Station is bypassed by several canals. Flow-duration data is not very meaningful except for period of record.

08332000 RIO GRANDE NEAR BERNARDO, N. MEX.

LOCATION.--Lat 34°25'01", long 106°48'00", Socorro County, Hydrologic Unit 13020203, in Belen or Sevilleta Grant on downstream side of bridge on U.S. Highway 60, 2 mi east of Bernardo, and at mile 1,487.2.

DRAINAGE AREA.--19,200 mi^2, approximately, including 2,940 mi^2 in closed basin in Colorado.

REMARKS.--Daily flows used in this study are the sum of daily flows in the river channel, the conveyance channel and Bernardo interior drain.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08334000 RIO PUERCO ABOVE ARROYO CHICO, NEAR GUADALUPE, N. MEX.

LOCATION.--Lat 35°38'08", long 107°09'56", in SW¼ sec.21, T.16 N., R.3 W., Sandoval County, Hydrologic Unit 13020204, on right bank 1.6 mi upstream from Arroyo Chico, 5.5 mi northeast of village of Guadalupe, and at mile 106.8.

DRAINAGE AREA.--402 mi^2, approximately.

REMARKS.--Extended to base period 1935-73 by station 08352500. Records for station 08333500 for water years 1945-51 accepted as being equivalent for this study. Diversion for irrigation of about 3,700 acres above station in past years, but present diversion is negligible.

08340500 ARROYO CHICO NEAR GUADALUPE, N. MEX.

LOCATION.--Lat 35°35'33", long 107°11'19", in NE¼ sec.30, T.16 N., R.3 W., Sandoval County, Hydrologic Unit 13020205, on left bank 0.2 mi upstream from mouth, 4.1 mi northwest of Guadalupe, and 5.5 mi southwest of Cabezon.

DRAINAGE AREA.--1,390 mi^2, approximately.

REMARKS.--Extended to base period 1935-73 by station 08352500. Diversions for irrigation of about 100 acres above station.

08343000 RIO SAN JOSE AT GRANTS, N. MEX.

LOCATION.--Lat 35°09'16", long 107°52'11", in SW¼NW¼ sec.26, T.11 N., R.10 W., Valencia County, Hydrologic Unit 13020207, on right bank at bridge on old State Highway 53 at Grants, 0.2 mi south of U.S. Highway 66, and at mile 67.8.

DRAINAGE AREA.--1,020 mi^2, approximately.

REMARKS.--Extended to base period 1935-73 by station 08352500. Flow partly regulated by Bluewater Lake (station 08341400) 24 mi upstream. Diversions and groundwater withdrawals for irrigation of about 4,500 acres above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08343100 GRANTS CANYON AT GRANTS, N. MEX.

LOCATION.--Lat 35°09'39", long 107°50'15", in NE¼NE¼ sec.25, T.11 N., R.10 W., Valencia County, Hydrologic Unit 13020207, at Roosevelt Avenue, in the town of Grants, 0.2 mi east of intersection of Roosevelt and First Avenue, and 1.1 mi upstream from confluence with Rio San Jose (formerly Bluewater Creek).

DRAINAGE AREA.--13.0 mi^2.

REMARKS.--Extended to base period 1935-73 by station 08352500. No flow about 96.5 percent of days.

08343500 RIO SAN JOSE NEAR GRANTS, N. MEX.

LOCATION.--Lat 35°04'27", long 107°45'01", in SE¼SE¼ sec.23, T.10 N., R.9 W., Valencia County, Hydrologic Unit 13020207, on right bank at west boundary of Acoma Pueblo Grant, 8.5 mi southeast of Grants, and at mile 57.4.

DRAINAGE AREA.--2,300 mi^2, approximately, of which 1,130 mi^2 does not contribute directly to surface runoff.

REMARKS.--Extended to base period 1935-73 by station 08352500. Base flow is from springs.

08351500 RIO SAN JOSE AT CORREO, N. MEX.

LOCATION (REVISED).--Lat 34°58'03", long 107°10'10", in NE¼ sec.32, T.9 N., R.3 W., Valencia County, Hydrologic Unit 13020207, on left bank 0.3 mi downstream from State Highway 6, 1.2 mi northeast of Correo, and 13 mi upstream from mouth.

DRAINAGE AREA.--3,660 mi^2, approximately, of which about 1,130 mi^2 does not contribute directly to surface runoff.

REMARKS.--Extended to base period 1935-73 by station 08352500. Flow regulated to some extent since 1927 by Bluewater Lake (station 08341400) 79 mi upstream.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08352500 RIO PUERCO AT RIO PUERCO, N. MEX.

LOCATION.--Lat 34°47'38", long 106°59'20", in NW¼ sec.31, T.7 N., R.1 W., Valencia County, Hydrologic Unit 13020204, in San Clemente Grant, on downstream end of pier nearest left abutment of the Atchison, Topeka and Santa Fe Railway Co. bridge, 7 mi downstream from Rio San Jose, and at mile 36.2.

DRAINAGE AREA.--6,590 mi^2, approximately, of which at least 1,130 mi^2 does not contribute directly to surface runoff.

REMARKS.--Used as an index station for period 1935-73. Diversions for irrigation of about 11,500 acres above station (includes 3,700 acres irrigated partly or entirely from wells).

08353000 RIO PUERCO NEAR BERNARDO, N. MEX.

LOCATION.--Lat 34°24'33", long 106°51'09", in SE¼ sec.8, T.2 N., R.1 E., Socorro County, Hydrologic Unit 13020204, on bridge on former U.S. Highway 85 and 0.2 mi upstream from Interstate Highway 25, 1.2 mi southwest of Bernardo, 3 mi upstream from mouth, and 18 mi south of Belen.

DRAINAGE AREA.--7,350 mi^2, approximately, of which at least 1,130 mi^2 does not contribute directly to surface runoff.

REMARKS.--Extended to base period 1935-73 by station 08352500. Diversions for irrigation of about 11,500 acres above station (includes 3,700 acres irrigated partly or entirely from wells).

08354000 RIO SALADO NEAR SAN ACACIA, N. MEX.

LOCATION.--Lat 34°17'50", long 106°53'59", in NW¼ sec.24, T.1 N., R.1 W., Socorro County, Hydrologic Unit 13020209, at former bridge site 0.3 mi upstream from bridge on Interstate Highway 25, 3.1 mi upstream from mouth, 2.9 mi north of San Acacia, and 15 mi north of Socorro.

DRAINAGE AREA.--1,380 mi^2, approximately.

REMARKS.--Extended to base period 1935-73 by station 08352500. Diversions for irrigation of about 100 acres above station. Stream is dry about 87 percent of time.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08358500 RIO GRANDE AT SAN MARCIAL, N. MEX.

LOCATION.--Lat 33°40'50", long 106°59'30", Socorro County, Hydrologic Unit 13020203, in Pedro Armendaris Grant No. 33, on pier of the Atchison, Topeka, and Santa Fe Railway Co. bridge, 1.1 mi downstream from former site of San Marcial, 18.5 mi southwest of San Antonio, and at mile 1,425.2.

DRAINAGE AREA.--27,700 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, Colo.

REMARKS.--The daily flows used in this study are the sum of the daily flow in the river channel and the conveyance channel and represent total flow in the valley cross section. Flows affected by diversions for irrigation and by changes in pattern of regulation.

08360000 ALAMOSA CREEK NEAR MONTICELLO, N. MEX.

LOCATION.--Lat 33°34'09", long 107°35'33", in SE¼ sec.31, T.8 S., R.7 W., Socorro County, Hydrologic Unit 13020211, on left bank at Alamosa damsite and below old Fort Ojo Caliente, just downstream from Wildhorse Creek, and 15 mi northwest of Monticello.

DRAINAGE AREA.--403 mi^2.

REMARKS.--Data presented for period of record only. No diversions above station. About 80 percent of time all flow is from spring.

08377900 RIO MORA NEAR TERRERO, N. MEX.

LOCATION.--Lat 35°46'38", long 105°39'27", in E½NE¼ sec.22, T.18 N., R.12 E., San Miguel County, Hydrologic Unit 13060001, in Santa Fe National Forest, on left bank 450 ft upstream from bridge on State Highway 63, 600 ft upstream from mouth, and 2.6 mi north of Terrero.

DRAINAGE AREA.--53.2 mi^2.

REMARKS.--Extended to base period by station 08378500. Flow is not affected by works of man.

United States Department of the Interior

GEOLOGICAL SURVEY
Water Resources Division
P. O. Box 26659
Albuquerque, New Mexico 87125

October 21, 1980

MEMORANDUM

TO: Library Division (SLL)
Washington, D. C.

FROM: Robert R. White, Chief, Scientific Publications Unit
Albuquerque, New Mexico

SUBJECT: PUBLICATION — "Flow characteristics of New Mexico Streams"
Part 1: Flow Duration by L. J. Reiland

In connection with the distribution of the subject report which has been released as a New Mexico State Engineer Office publication, one copy is transmitted herewith for your records.

Robert R. White

ROBERT R. WHITE
Chief, Scientific Publications Unit

Encl

ONE HUNDRED YEARS OF EARTH SCIENCE IN THE PUBLIC SERVICE

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Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08378500 PECOS RIVER NEAR PECOS, N. MEX.

LOCATION.--Lat 35°42'30", long 105°40'55", in NE¼NE¼ sec.17, T.17, N., R.12 E., San Miguel County, Hydrologic Unit 13060001, in Santa Fe National Forest, on left bank at downstream side of bridge on private road, 300 ft upstream from Indian Creek, 2.4 mi downstream from Holy Ghost Creek, 9.0 mi north of Pecos, and at mile 896.6.

DRAINAGE AREA.--189 mi^2.

REMARKS.--Used as an index station. Most of records prior to Water Year 1931 are not in computer storage. Diversions for irrigation of about 75 acres above station.

08379200 TECOLOTE CREEK NEAR SAN PABLO, N. MEX.

LOCATION.--Lat 35°33'10", long 105°22'10", San Miguel County, Hydrologic Unit 13060001, in Las Vegas Grant, on left bank 0.5 mi downstream from San Pablo Creek, and 1.75 mi northeast of San Pablo.

DRAINAGE AREA.--83 mi^2, approximately.

REMARKS.--Extended to base period by station 08380500. Diversions above station for irrigation of about 250 acres.

08379500 PECOS RIVER NEAR ANTON CHICO, N. MEX.

LOCATION.--Lat 35°10'44", long 105°06'30", Guadalupe County, Hydrologic Unit 13060001, in Anton Chico Grant, on right bank 2.1 mi upstream from Canon Blanco, 2.3 mi southeast of Anton Chico, 9.7 mi downstream from Tecolote Creek, and at mile 808.0.

DRAINAGE AREA.--1,050 mi^2, approximately (contributing area).

REMARKS.--Used as an index station. Diversions above station for irrigation of about 4,900 acres. Acequia del Bodo Juan Paiz bypasses station on left bank.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08380500 GALLINAS CREEK NEAR MONTEZUMA, N. MEX.

LOCATION.--Lat 35°39'07", long 105°19'06", San Miguel County, Hydrologic Unit 13060001, in Las Vegas Grant, on left bank 2.4 mi west of Montezuma, 6.9 mi northwest of Las Vegas, and at mile 74.4.

DRAINAGE AREA.--84 mi^2, approximately.

REMARKS.--Used as an index station. Diversions for irrigation of about 80 acres, 1959 determination, above station.

08382500 GALLINAS RIVER NEAR COLONIAS, N. MEX.

LOCATION.--Lat 35°10'55", long 104°53', Guadalupe County, Hydrologic Unit 13060001, in Anton Chico and Preston Beck Grants, on right bank 2.3 mi south of San Miguel-Guadalupe County line, 2.4 mi upstream from mouth, 5.8 mi northwest of Colonias, and 9.0 mi east of Dilia.

DRAINAGE AREA.--610 mi^2, approximately.

REMARKS.--Extended to base period by station 07222500. Diversions for irrigation of about 7,000 acres, 1959 determination, above station.

08383000 PECOS RIVER AT SANTA ROSA, N. MEX.

LOCATION.--Lat 34°56'36", long 104°41'55", in NW¼SE¼ sec.3, T.8 N., R.21 E., Guadalupe County, Hydrologic Unit 13060001, on left bank, 0.4 mi downstream from bridge on U.S. Highway I-40, 0.6 mi upstream from bridge on U.S. Highway I-40 Business in Santa Rosa, 1.9 mi upstream from El Rito Creek, and at mile 748.4.

DRAINAGE AREA.--2,650 mi^2, approximately (contributing area).

REMARKS.--Used as an index station. Diversions for irrigation of about 12,000 acres, 1959 determination, above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08383500 PECOS RIVER NEAR PUERTO DE LUNA, N. MEX.

LOCATION.--Lat 34°43'48", long 104°31'28", in NE¼SE¼NW¼ sec.20, T.6 N., R.23 E., Guadalupe County, Hydrologic Unit 13060001, on left bank 9 mi southeast of Puerto de Luna, 17.5 mi upstream from Sumner Dam, and at mile 719.5.

DRAINAGE AREA.--3,970 mi^2, approximately (contributing area).

REMARKS.--Extended to base period by station 08383000. Diversions for irrigation of about 12,500 acres, 1959 determination, above station.

08384500 PECOS RIVER BELOW SUMNER DAM, N. MEX.

LOCATION.--Lat 34°36'15", long 104°23'14", in lot 1, sec.2, T.4 N., R.24 E., DeBaca County, Hydrologic Unit 13060003, on left bank 1,200 ft downstream from Sumner Dam, 2.9 mi upstream from Salado Creek, 4.6 mi northeast of Guadalupe, 12.2 mi northwest of Fort Sumner, and at mile 701.7.

DRAINAGE AREA.--4,390 mi^2, approximately (contributing area).

REMARKS.--Since 1937 flow regulated by Lake Sumner (station 08384000). Flow-duration data presented for regulated condition only.

08386000 PECOS RIVER NEAR ACME, N. MEX.

LOCATION.--Lat 33°32'10", long 104°22'34", in SW¼NW¼ sec.14, T.9 S., R.25 E., Chaves County, Hydrologic Unit 13060007, on right bank 3.0 mi downstream from U.S. Highway 70, 3.7 mi downstream from Salt Creek, 4.7 mi southwest of Acme, 14 mi northeast of Roswell, and at mile 585.3.

DRAINAGE AREA.--11,380 mi^2, approximately (contributing area).

REMARKS.--Flow regulated by Lake Sumner (station 08384000). Diversions for irrigation of about 20,000 acres, 1959 determination, above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08387000 RIO RUIDOSO AT HOLLYWOOD, N. MEX.

LOCATION.--Lat 33°19'43", long 105°36'54", in SW¼SE¼NE¼ sec.30, T.11 S., R.14 E., Lincoln County, Hydrologic Unit 13060008, on right upstream bridge abutment on road leading to Ruidoso Downs race track, 0.2 mi north of U.S. Highway 70, 1.1 mi east of the Hollywood Post Office, 1.2 mi downstream from the Ruidoso sewage disposal plant, 1.8 mi downstream from Gavilan Canyon, 2.8 mi downstream from Carrizo Creek and at mile 23.4.

DRAINAGE AREA.--120 mi^2, approximately.

REMARKS.--F. Herrera ditch-S (station 08386900) diverts from right bank 1.5 mi upstream and bypasses station for irrigation of 75 acres, 1959 determination. Village of Ruidoso diverts from right bank 7.0 mi upstream for municipal use and returns a portion of this water as effluent from sewage disposal plant 1.2 mi upstream.

08387600 EAGLE CREEK BELOW SOUTH FORK, NEAR ALTO, N. MEX.

LOCATION.--Lat 33°23'33", long 105°43'16", in SE¼SW¼ sec.31, T.10 S., R.13 E., Lincoln County, Hydrologic Unit 13060008, Lincoln National Forest at right bank, 100 ft downstream from culvert under state Road No. 532, 0.1 mi downstream from South Fork, and 2.4 mi west of Alto.

DRAINAGE AREA.--8.14 mi^2.

REMARKS.--Data presented for period of record only. No diversions for irrigation above station.

08388000 RIO RUIDOSO AT HONDO, N. MEX.

LOCATION.--Lat 33°23'00", long 105°16'30", in NE¼SW¼ sec.4, T.11 S., R.17 E., Lincoln County, Hydrologic Unit 13060008, on right bank 0.25 mi upstream from confluence with Rio Bonito, and 0.5 mi southwest of Hondo.

DRAINAGE AREA.--290 mi^2.

REMARKS.--Data presented for period of record only. Diversions above station for irrigation of about 2,500 acres.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08389500 RIO BONITO AT HONDO, N. MEX.

LOCATION.--Lat 33°23'20", long 105°16'30", in NE¼SW¼ sec.4, T.11 S., R.17 E., Lincoln County, Hydrologic Unit 13060008, near center span on downstream side of bridge on U.S. Highway 70, at Hondo, 0.5 mi upstream from mouth.

DRAINAGE AREA.--295 mi^2 contributing area.

REMARKS.--Data presented for period of record only as a satellite station but not extended to base period. Diversions for irrigation of about 1,600 acres above station. No flow was recorded for 48.8 percent of days during period of record.

08390500 RIO HONDO AT DIAMOND A RANCH, NEAR ROSWELL, N. MEX.

LOCATION.--Lat 33°20'57", long 104°51'05", in NE¼NE¼ sec.20, T.11 S., R.21 E., Chaves County, Hydrologic Unit 13060008, on right bank 15 ft downstream from county road bridge at Diamond A Ranch, 1.3 mi south of U.S. Highway 70-380, 13 mi upstream from Two Rivers Reservoir, 21 mi upstream from mouth of Rocky Arroyo, 18 mi west of Roswell, and at mile 44.7.

DRAINAGE AREA.--947 mi^2, contributing area.

REMARKS.--Data presented for period of record only. Diversions and ground-water withdrawals above station for irrigation above and below station of about 6,500 acres, 1959 determination.

08393200 ROCKY ARROYO ABOVE TWO RIVERS RESERVOIR, NEAR ROSWELL, N. MEX.

LOCATION.--Lat 33°17'07", long 104°47'47", in NE¼SW¼ sec.11, T.12 S., R.21½ E., Chaves County, Hydrologic Unit 13060008, on left bank, 2.1 mi upstream from mouth of Buchanan Draw, 5.2 mi upstream from Rocky Dam (Two Rivers Reservoir), and 17 mi southwest of Roswell.

DRAINAGE AREA.--31 mi^2, approximately.

REMARKS.--Data presented for period of record only. No diversions above station. No flow recorded 98.6 percent of time.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08394500 RIO FELIX AT OLD HIGHWAY BRIDGE, NEAR HAGERMAN, N. MEX.

LOCATION.--Lat 33°07'30", long 104°20'40", in SW¼SW¼SE¼ sec.4, T.14 S., R.26 E., Chaves County, Hydrologic Unit 13060009, near left bank on downstream side of abandoned bridge pier, 0.6 mi upstream from alternate U.S. Highway 285, 1.3 mi northwest of Hagerman, and 2.7 mi upstream from mouth. Mouth at Pecos River mile 541.4.

DRAINAGE AREA.--932 mi^2, contributing area.

REMARKS.--Flow-duration data extended to include water years 1933-39 by records for station 1.0 mi downstream. Flow-duration data presented for two distinct periods to show effect of change in ground water inflow.

08395500 PECOS RIVER NEAR LAKE ARTHUR, N. MEX.

LOCATION.--Lat 32°59'18", long 104°19'20", in SW¼NE¼ sec.27, T.15 S., R.26 E., Chaves County, Hydrologic Unit 13060007, on left bank 400 ft upstream from county bridge, 2.5 mi east of Lake Arthur, 7 mi upstream from Cottonwood Creek, 11 mi northeast of Artesia, and at mile 522.0.

DRAINAGE AREA.--14,760 mi^2, approximately (contributing area).

REMARKS.--Not extended to base period because of changing conditions upstream. Flow partly regulated by Lake Sumner (station 08384000). Diversions and ground-water withdrawals for irrigation of about 124,000 acres, 1959 determination, above station.

08396000 COTTONWOOD CREEK NEAR LAKE ARTHUR, N. MEX.

LOCATION.--Lat 32°54'55", long 104°22'00", in SW¼SE¼ sec.15, T.16 S., R.26 E., Eddy County, Hydrologic Unit 13060007, on right bank 75 ft upstream from road bridge, 1.5 mi upstream from mouth, and 6.0 mi south of town of Lake Arthur.

DRAINAGE AREA.--199 mi^2 contributing area.

REMARKS.--Data presented for period of record only. Records for June and September 1935 estimated to complete the year. Diversions and ground-water withdrawals for irrigation of about 4,500 acres above station. High-flow records are uncertain because of bypass flow; subsequent to 1957 low flow was affected by pumping from creek.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08396500 PECOS RIVER NEAR ARTESIA, N. MEX.

LOCATION.--Lat 32°50'25", long 104°19'23", in NW¼NW¼ sec.18, T.17 S., R.27 E., Eddy County, Hydrologic Unit 13060007, near left bank on downstream end of bridge pier on State Highway 83, 4.3 mi east of Artesia, 7.0 mi upstream from Rio Penasco, 17 mi upstream from McMillan Dam, and at mile 503.9.

DRAINAGE AREA.--15,300 mi^2, approximately (contributing area).

REMARKS.--Flow-duration data presented for two periods of record to show effect of changing conditions upstream. Record not consistant throughout either period. Diversions and ground-water withdrawals for irrigation of about 154,000 acres above station.

08398500 RIO PENASCO AT DAYTON, N. MEX.

LOCATION.--Lat 32°44'36", long 104°24'49", in NE¼SE¼SE¼ sec.18, T.18 S., R.26 E., Eddy County, Hydrologic Unit 13060010, on left bank 1.2 mi upstream from U.S. Highway 285, 1.9 mi northwest of old Dayton railway station, 5.6 mi upstream from mouth, and 7.0 mi south of Artesia. Mouth at Pecos River mile 496.4.

DRAINAGE AREA.--1,060 mi^2, approximately.

REMARKS.--Data presented for period of record only. Diversions and ground-water withdrawals for irrigation of about 3,000 acres, 1959 determination, above station.

08400000 FOURMILE DRAW NEAR LAKEWOOD, N. MEX.

LOCATION.--Lat 32°40'20", long 104°22'07", in SW¼NW¼SE¼ sec.10, T.19 S., R.26 E., Eddy County, Hydrologic Unit 13060011, in left side of channel 360 ft downstream from ford on Lakewood-Dayton road, 1.9 mi downstream from U.S. Highway 285, 2.8 mi north of Lakewood, 3.8 mi upstream from mouth, and 11.5 mi south of Artesia. Mouth at Pecos River mile 490.6.

DRAINAGE AREA.--265 mi^2, approximately.

REMARKS.--No surface diversions above station. No flow recorded 98.5 percent of days.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08401200 SOUTH SEVEN RIVERS NEAR LAKEWOOD, N. MEX.

LOCATION.--Lat 32°35'19", long 104°25'17", in SE¼SE¼NW¼ sec.7, T.20 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on downstream side of center pier of bridge on U.S. Highway 285, 0.4 mi south of Seven Rivers, 2.6 mi upstream from mouth, and 4.0 mi southwest of Lakewood. Mouth at Pecos River mile 480.9.

DRAINAGE AREA.--220 mi^2, approximately.

REMARKS.--Data presented for period of record only. No surface diversions above station, ground-water withdrawals for irrigation of 240 acres above station.

08401900 ROCKY ARROYO AT HIGHWAY BRIDGE, NEAR CARLSBAD, N. MEX.

LOCATION.--Lat 32°30'23", long 104°22'28", in SE¼SE¼ sec.3, T.21 S., R.25 E., Eddy County, Hydrologic Unit 13060011, at downstream end of bridge pier nearest left bank on U.S. Highway 285, 2.1 mi upstream from mouth and 10 mi northwest of Carlsbad. Mouth at Pecos River mile 475.2.

DRAINAGE AREA.--285 mi^2, approximately.

REMARKS.--Diversions for irrigation of 220 acres above station. No flow recorded 97.5 percent of days.

08402000 PECOS RIVER AT DAMSITE 3, NEAR CARLSBAD, N. MEX.

LOCATION.--Lat 32°30'40", long 104°19'58", in lot 14, sec.6, T.21 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on right bank at damsite 3 of Carlsbad project of Bureau of Reclamation, about 1 mi upstream from flow line of Lake Avalon, 1.3 mi downstream from Rocky Arroyo, 8.0 mi northwest of Carlsbad, and at mile 473.8.

DRAINAGE AREA.--17,980 mi^2, approximately (contributing area).

REMARKS.--Flow regulated by Lake Sumner and Lake McMillan (stations 08384000, 08400500). Diversions and ground-water withdrawals for irrigation of about 173,000 acres, 1959 determination, above station.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - continued

08405000 PECOS RIVER AT CARLSBAD, N. MEX.

LOCATION.--Lat 32°25'03", long 104°13'27", NW¼SE¼SE¼ sec.6, T.22 S., R.27 E., Eddy County, Hydrologic Unit 13060011, in downstream end of pier near center of Green Street bridge in Carlsbad, 0.6 mi upstream from Dark Canyon.

DRAINAGE AREA.--18,100 mi^2, approximately (contributing area).

REMARKS.--Used as an index station; extended to base period by station 08405200 (Pecos River below Dark Canyon Draw, at Carlsbad, N. Mex.). Flow-duration data for base period is not very meaningful because of changing conditions upstream. Station is bypassed by two irrigation canals.

08405500 BLACK RIVER ABOVE MALAGA, N. MEX.

LOCATION.--Lat 32°13'44", long 104°09'02", in SW¼NW¼SW¼ sec.12, T.24 S., R.27 E., Eddy County, Hydrologic Unit 13060011, on right bank 0.6 mi upstream from Black River diversion dam, 4.6 mi west of Malaga, and 7.1 mi upstream from mouth. Mouth at Pecos River mile 436.3.

DRAINAGE AREA.--343 mi^2.

REMARKS.--Data presented for period of record only. Diversions and ground-water withdrawals for irrigation of about 1,000 acres, 1959 determination, above station.

08406500 PECOS RIVER NEAR MALAGA, N. MEX.

LOCATION.--Lat 32°12'26", long 104°01'22", in SW¼NW¼NE¼ sec.19, T.24 S., R.29 E., Eddy County, Hydrologic Unit 13060011, on right bank 3.1 mi southeast of Malaga, 4.3 mi downstream from Black River, and at mile 432.2. Water-quality sampling site on right bank 2.2 mi upstream.

DRAINAGE AREA.--19,190 mi^2, approximately (contributing area).

REMARKS.--Data presented for period of record only. Diversions and ground-water withdrawals for irrigation of about 202,000 acres above station. Flow-duration data presented separately for the two periods of record.

Table 3.--Gaging station descriptions - Continued

RIO GRANDE BASIN - concluded

08407500 PECOS RIVER AT RED BLUFF, N. MEX.

LOCATION.--Lat 32°04'30", long 104°02'21", in SW¼NW¼NE¼ sec.1, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13060011, on right bank at Red Bluff, 0.2 mi downstream from Red Bluff Draw, 1.6 mi northwest of the El Paso Natural Gas (Pecos River) compressor station, 5.2 mi north of the New Mexico-Texas state line, 5.5 mi upstream from Delaware River, and at mile 411.2.

DRAINAGE AREA.--19,540 mi^2, approximately (contributing area).

REMARKS.--Data presented for period of record only. Diversions and ground-water withdrawals above station for irrigation of about 202,000 acres.

08408500 DELAWARE RIVER NEAR RED BLUFF, N. MEX.

LOCATION.--Lat 32°01'23', long 104°03'15', in NE¼SW¼SE¼ sec.23, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13070002, near center of channel on downstream side of pier of bridge on U.S. Highway 285, 2.1 mi north of the New Mexico-Texas state line, 3.6 mi southwest of Red Bluff, 3.7 mi upstream from mouth and 14 mi south of Malaga. Mouth at Pecos River mile 405.6.

DRAINAGE AREA.--689 mi^2.

REMARKS.--Data presented for period of record only. One small upstream diversion.

MIMBRES RIVER BASIN

08476300 MIMBRES RIVER AT MCKNIGHT DAMSITE, NEAR MIMBRES, N. MEX.

LOCATION.--Lat 32°56'14", long 108°00'55", in SW¼SE¼ sec.6, T.16 S., R.11 W., Grant County, on right bank 0.3 mi upstream from Mimbres Ranger station, 0.4 mi downstream from Cottonwood Canyon, and 8 mi northwest of Mimbres.

DRAINAGE AREA.--97.3 mi^2.

REMARKS.--Extended to base period by station 08477000.

Table 3.--Gaging station descriptions - Continued

MIMBRES RIVER BASIN - concluded

08477000 MIMBRES RIVER NEAR MIMBRES, N. MEX.

LOCATION.--Lat 32°52'28", long 107°59'05", in SE¼NW¼ sec.23, T.16 S., R.11 W., Grant County, Hydrologic Unit 13030202, on left bank 0.7 mi downstream from Bear Canyon, 1.5 mi northwest of Mimbres, and at mile 74.8.

DRAINAGE AREA.--152 mi^2.

REMARKS.--Used as an index station. Some regulation by Bear Canyon Reservoir 1.3 mi upstream, capacity 700 acre-ft. Diversions for irrigation of about 300 acres above station.

08477500 MIMBRES RIVER NEAR FAYWOOD, N. MEX.

LOCATION.--Lat 32°35'10", long 107°55'10", in NW¼ sec.7, T.20 S., R.10 W., Luna County, Hydrologic Unit 13030202, on right bank 6.0 mi northeast of Faywood Hot Springs, 10 mi northeast of Faywood, and 12 mi upstream from San Vicente Arroyo.

DRAINAGE AREA.--440 mi^2.

REMARKS.--Extended to base period by station 08477000. Diversions for irrigation of about 1750 acres above station.

08477600 SAN VICENTE ARROYO AT SILVER CITY, N. MEX.

LOCATION.--Lat 32°45'15", long 108°16'30", Grant County, Hydrologic Unit 13030202, on left bank in Silver City, 800 ft upstream from bridge at Broadway Street, and 1,300 ft downstream from confluence of Silva and Pinos Altos Creeks.

DRAINAGE AREA.--26.5 mi^2.

REMARKS.--Extended to base period by station 08477000. Flow-duration data as adjusted to base period is poorly defined.

Table 3.--Gaging station descriptions - Continued

TULAROSA VALLEY

08481500 RIO TULAROSA NEAR BENT, N. MEX.

LOCATION.--Lat 33°08'41", long 105°53'50", in SE¼NW¼ sec.32, T.13 S., R.11 E., Otero County, Hydrologic Unit 13050003, on right bank 50 ft downstream from old U.S. Highway 70 bridge, 2.6 mi west of Bent, and 8.5 mi northeast of Tularosa, and at mile 19.4.

DRAINAGE AREA.--120 mi^2, approximately.

REMARKS.--Data presented for period of record only. From October 1938 to December 1947 a station was operated at a site 6.0 mi downstream. During periods of base flow records at the two sites should be roughly equivalent but there is no period of concurrent record on which to base a relationship. Average discharge at downstream site for years 1939-47 was 15.3 ft^3/s.

08486250 TULAROSA VALLEY TRIBUTARY NEAR WHITE SANDS, N. MEX.

LOCATION.--Lat 32°24'11", long 106°28'46", in SW¼SW¼ sec.7, T.22 S., R.5 E., Dona Ana County, Hydrologic Unit 13050003, on right upstream wingwall of culvert on paved road 1.2 mi north of entrance gate to White Sands Missile Range, and 2.6 mi south of U.S. Highway 70.

DRAINAGE AREA.--17.2 mi^2.

REMARKS.--Data presented for period of record only. No flow recorded 97 percent of days.

08486260 TULAROSA VALLEY TRIBUTARY AT WHITE SANDS, N. MEX.

LOCATION.--Lat 32°22'05", long 106°28'44", in SE¼NE¼ sec.25, T.22 S., R.4 E., Dona Ana County, on left upstream wingwall of culvert 2,000 ft south of Raritan Avenue in White Sands.

DRAINAGE AREA.--21.0 mi^2.

REMARKS.--Data presented for period of record only. No flow recorded 98 percent of days.

Table 3.--Gaging station descriptions - Continued

SAN JUAN RIVER BASIN

09342500 SAN JUAN RIVER AT PAGOSA SPRINGS, COLO.

LOCATION.--Lat 37°15'58", long 107°00'37", in NW¼SW¼ sec.13, T.35 N., R.2 W., Archuleta County, Hydrologic Unit 14080101, on right bank at former bridge site in Pagosa Springs, 0.2 mi upstream from McCabe Creek, 0.6 mi downstream from bridge on U.S. Highway 160, and 2.0 mi upstream from Mill Creek.

DRAINAGE AREA.--298 mi^2.

REMARKS.--Extended to base period by stations 09350500 and 09361500. Minor diversions for irrigation above station.

09346000 NAVAJO RIVER AT EDITH, COLO.

LOCATION.--Lat 37°00'10", long 106°54'25", in NW¼NW¼ sec.24, T.32 N., R.1 W., Archuleta County, Hydrologic Unit 14080101, on right bank 290 ft downstream from highway bridge, 0.2 mi southeast of Edith, 0.5 mi upstream from Colorado-New Mexico State line, and 1.3 mi upstream from Coyote Creek.

DRAINAGE AREA.--172 mi^2.

REMARKS.--Extended to base period by station 09342500. Diversions for irrigation of about 1,700 acres above station and since March 1971 diversions through Azotea tunnel.

09346400 SAN JUAN RIVER NEAR CARRACAS, COLO.

LOCATION.--Lat 37°00'49", long 107°18'42", in SE¼SW¼ sec.17, T.32 N., R.4 W., Archuleta County, Hydrologic Unit 14080101, on right bank just upstream from flow line of Navajo Reservoir, 3 mi northwest of Carracas, 7.2 mi upstream from Piedra River, and at mile 332.8.

DRAINAGE AREA.--1,230 mi^2, approximately.

REMARKS.--Extended to base period by station 09342500. Diversions for irrigation of about 11,000 acres above station. Highwater diversions above station into Rio Grande Basin through Azotea tunnel (08284160) began in March 1971.

Table 3.--Gaging station descriptions - Continued

SAN JUAN RIVER BASIN - continued

09349500 PIEDRA RIVER NEAR PIEDRA, COLO.

LOCATION.--Lat 37°13'20", long 107°20'32", in NW¼NW¼ sec. 17, T.34 N., R.4 W., Archuleta County, Hydrologic Unit 14080102, on right bank 0.1 mi downstream from bridge on U.S. Highway 160, 0.4 mi upstream from Yellow Jacket Creek, and 1.5 mi northwest of Piedra.

DRAINAGE AREA.--371 mi^2.

REMARKS.--Extended to base period by station 09342500. Diversions for irrigation of about 2,220 acres above station and for two transmountain ditches.

09349800 PIEDRA RIVER NEAR ARBOLES, COLO.

LOCATION.--Lat 37°05'18", long 107°23'50", in NE¼SW¼ sec.21, T.33 N., R.5 W., Archuleta County, Hydrologic Unit 14080102, on left bank 3 mi downstream from Ignacio Creek, 5.2 mi northeast of Arboles Post Office, and 8 mi upstream from mouth.

DRAINAGE AREA.--629 mi^2.

REMARKS.--Extended to base period by station 09342500. Diversions for irrigation of about 2,800 acres above station.

09350500 SAN JUAN RIVER AT ROSA, N. MEX.

LOCATION.--Lat 37°00'20", long 107°24'10", in SW¼ sec.21, T.32 N., R.5 W., Archuleta County, Hydrologic Unit 14080101, on right bank 0.25 mi downstream from Piedra River, and 0.9 mi upstream from Colorado-New Mexico State line.

DRAINAGE AREA.--1,990 mi^2, approximately.

REMARKS.--Used as an index station; daily records for November 1936 to April 1937 estimated on basis of hydrographic comparison, and records for June 1965 to September 1973 computed as sum of daily records for stations 09346400 and 09349800 to complete base period. Diversions for irrigation of about 14,000 acres above station. Correlated with Animas River at Durango.

Table 3.--Gaging station descriptions - Continued

SAN JUAN RIVER BASIN - continued

09354500 LOS PINOS RIVER AT LA BOCA, COLO.

LOCATION.--Lat 37°00'34", long 107°35'56", in NE¼NW¼ sec.22, T.32 N., R.7 W., La Plata County, Hydrologic Unit 14080101, on downstream end of right abutment of the Denver & Rio Grande Western Railroad Co. bridge, at southeast edge of La Boca, 0.1 mi upstream from Spring Creek, and 13 mi upstream from mouth.

DRAINAGE AREA.--510 mi^2, approximately.

REMARKS.--Data presented for period of record only. Flow regulated by Vallecito Reservoir (station 09353000), 24 mi upstream, since April 1941. Diversions for irrigation of about 33,000 acres above station.

09355000 SPRING CREEK AT LA BOCA, COLO.

LOCATION.--Lat 37°00'46", long 107°35'42", in S½ sec.15, T.32 N., R.7 W., La Plata County, Hydrologic Unit 14080101, on right bank in an excavated channel, 0.2 mi upstream from mouth, and 0.2 mi east of La Boca.

DRAINAGE AREA.--58 mi^2, approximately.

REMARKS.--Data presented for period of record only. Part of flow is return waste from irrigation.

09355500 SAN JUAN RIVER NEAR ARCHULETA, N. MEX.

LOCATION.--Lat 36°48'05", long 107°41'51", in N½ sec.20, T.30 N., R.8 W., San Juan County, Hydrologic Unit 14080101, on left bank 0.5 mi upstream from Gobernador Canyon, 0.8 mi northeast of Archuleta, 7.2 mi downstream from Navajo Dam, and at mile 291.4.

DRAINAGE AREA.--3,260 mi^2, approximately.

REMARKS.--Extended to base period for unregulated condition by station 09350500. Flow completely regulated by Navajo Dam since May 1962 and pattern of regulation has been variable.

Table 3.--Gaging station descriptions - Continued

SAN JUAN RIVER BASIN - continued

09356500 SAN JUAN RIVER NEAR BLANCO, N. MEX.

LOCATION.--Lat 36°43'50", long 107°48'50", in NE¼ sec.18, T.29 N., R.9 W., San Juan County, Hydrologic Unit 14080101, 0.5 mi upstream from highway bridge, 1.0 mi upstream from Canyon Largo, and 1.5 mi east of Blanco.

DRAINAGE AREA.--3,560 mi^2, approximately.

REMARKS.--Extended to base period by station 09350500 for unregulated condition. Diversions above station for irrigation of about 52,000 acres.

09361500 ANIMAS RIVER AT DURANGO, COLO.

LOCATION.--Lat 37°16'45", long 107°52'47", in SW¼SW¼ sec.20, T.35 N., R.9 W., La Plata County, Hydrologic Unit 14080104, on left bank at Western Colorado Power Co.'s plant at Durango, 0.8 mi upstream from Lightner Creek.

DRAINAGE AREA.--692 mi^2.

REMARKS.--Used as an index station. Diversions for irrigation of about 4,000 acres above station. Minor regulation for power generation.

09363500 ANIMAS RIVER NEAR CEDAR HILL, N. MEX.

LOCATION.--Lat 37°02'17", long 107°52'25", in sec.7, T.32 N., R.9 W., La Plata County, Colorado, Hydrologic Unit 14080104, on right bank 0.8 mi downstream from Florida River, 2.5 mi upstream from Colorado-New Mexico State line, and 8.5 mi north of Cedar Hill.

DRAINAGE AREA.--1,090 mi^2, approximately.

REMARKS.--Used as an index station; extended to base period by stations 09361500 and 09364500. Diversions for irrigation of about 20,000 acres above station. During water years 1944-49, Twin Rocks Canal diverted above station for irrigation below. Slight regulation by Lemon Dam about 30 mi upstream on Florida River since November 1963.

Table 3.--Gaging station descriptions - Continued

SAN JUAN RIVER BASIN - continued

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.

LOCATION.--Lat 36°43'17", long 108°12'05", in SW¼SW¼ sec.15, T.29 N., R.13 W., San Juan County, Hydrologic Unit 14080104, in Boyd City Park, on right bank 900 ft upstream from bridge on former State Highway 17, 0.4 mi downstream from bridge on State Highway 17, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--1,360 mi^2, approximately.

REMARKS.--Used as an index station. Diversions for irrigation of about 30,000 acres above station.

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.

LOCATION.--Lat 36°43'22", long 108°13'30", in SE¼ sec.17, T.29 N., R.13 W., San Juan County, Hydrologic Unit 14080105, on left bank 360 ft downstream from highway bridge, 4,000 ft downstream from Animas River, 1 mi west of Farmington, and at mile 251.4.

DRAINAGE AREA.--7,240 mi^2, approximately.

REMARKS.--Data presented for period of unregulated flow. Since June 1962 flow has been partly regulated by Navajo Dam 50 mi upstream and pattern of regulation has varied. Diversions above station for irrigation of about 86,000 acres. Low-flow records for 1931, 1934, and 1939 are inconsistent with subsequent low-flow records. Below 300 ft^3/s flow-duration curve is poorly defined.

09365500 LA PLATA RIVER AT HESPERUS, COLO.

LOCATION.--Lat 37°17'23", long 108°02'24", in NE¼SW¼ sec.14, T.35 N., R.11 W., La Plata County, Hydrologic Unit 14080105, on right bank at Hesperus, 700 ft downstream from U.S. Highway 160.

DRAINAGE AREA.--37 mi^2, approximately.

REMARKS.--Used as an index station. Records for 1958-60, not in computer storage, were processed manually to complete base period. Cherry Creek ditch diverts water above station for irrigation of about 2,000 acres in Cherry Creek drainage.

Table 3.--Gaging station descriptions - Continued

SAN JUAN RIVER BASIN - concluded

09366500 LA PLATA RIVER AT COLORADO-NEW MEXICO STATE LINE

LOCATION.--Lat 36°59'51", long 108°11'17", in NW¼SE¼ sec.10, T.32 N., R.13 W., La Plata County, Colorado, Hydrologic Unit 14080105, on right bank at Colorado-New Mexico State Line, 0.2 mi downstream from Ponds Arroyo, and 4.8 mi north of La Plata, NM.

DRAINAGE AREA.--331 mi^2.

REMARKS.--Flow-duration records for 1958-60 entered manually. Diversions above station for irrigation of about 15,000 acres.

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.

LOCATION.--Lat 36°47'32", long 108°43'54", in NW¼ sec.27, T.30 N., R.18 W., San Juan County, Hydrologic Unit 14080105, on left bank 3 mi west of Shiprock, 6 mi downstream from Chaco River, and at mile 215.0.

DRAINAGE AREA.--12,900 mi^2, approximately.

REMARKS.--Data presented for period of unregulated flow. Since 1962 flow partly regulated by Navajo Reservoir. Diversions for irrigation of about 118,000 acres above station.

LITTLE COLORADO RIVER BASIN

09386050 LARGO CREEK NEAR MANGAS, N. MEX.

LOCATION.--Lat 34°08'30", long 108°30'05", in SW¼ sec.10, T.2 S., R.16 W., Catron County, Hydrologic Unit 15020003, on right bank at El Caso Ranch, 0.5 mi upstream from Saw Mill Canyon, 10.5 mi southwest of Mangas, and 14 mi south of Quemado.

DRAINAGE AREA.--63 mi^2, approximately.

REMARKS.--Extended to base period by station 09444000. Data for 1960 water year processed manually. No diversions above station.

Table 3.--Gaging station descriptions - Continued

LITTLE COLORADO RIVER BASIN - concluded

09395500 PUERCO RIVER AT GALLUP, N. MEX.

LOCATION.--Lat 35°31'49", long 108°44'23", in SW¼NW¼ sec.15, T.15 N., R.18 W., McKinley County, Hydrologic Unit 15020006, 1,500 ft upstream from Second Street bridge in Gallup, and 0.5 mi upstream from Little Puerco Wash.

DRAINAGE AREA.--558 mi^2.

REMARKS.--Data presented for period of record only. Small diversions for irrigation above station. Records include two years of high runoff.

GILA RIVER BASIN

09430500 GILA RIVER NEAR GILA, N. MEX.

LOCATION.--Lat 33°03'40", long 108°32'12", in NE¼NW¼ sec.30, T.14 S., R.16 W., Grant County, Hydrologic Unit 15040001, on left bank at Hooker damsite, 1.6 mi upstream from Mogollon Creek, 7 mi northeast of Gila, and at mile 572.5.

DRAINAGE AREA.--1,864 mi^2.

REMARKS.--Used as an index station. Diversions for irrigation of about 500 acres above station.

09430600 MOGOLLON CREEK NEAR CLIFF, N. MEX.

LOCATION.--Lat 33°10'01", long 108°38'58", in SE¼SE¼ sec. 13, T.13 S., R.18 W., Grant County, Hydrologic Unit 15040001, on right bank 0.3 mi downstream from Rain Creek, 0.8 mi downstream from Gila Wilderness Boundary, 12 mi upstream from mouth, and 14 mi north of Cliff.

DRAINAGE AREA.--69 mi^2.

REMARKS.--Extended to base period by station 09430500.

Table 3.--Gaging station descriptions - Continued

GILA RIVER BASIN - continued

09431000 GILA RIVER NEAR CLIFF, N. MEX.

LOCATION.--Lat 32°56'20", long 108°36'20", in S½ sec.20, T.16 S., R.17 W., Grant County, Hydrologic Unit 15040002, at bridge on U.S. Highway 260, 1.5 mi downstream from Bear Creek, 1.5 mi south of Cliff, and 6.5 mi upstream from Mangas Creek.

DRAINAGE AREA.--2,438 mi^2.

REMARKS.--Extended to base period by station 09430500. Diversions above station for irrigation of about 4,500 acres.

09431500 GILA RIVER NEAR REDROCK, N. MEX.

LOCATION.--Lat 32°43'37", long 108°40'30", in W½ sec.23, T.18 S., R.18 W., Grant County, Hydrologic Unit 15040002, on left bank 0.2 mi downstream from Copper Canyon, 0.2 mi upstream from lower end of box canyon, 4.7 mi northeast of Redrock, 14 mi downstream from Mangas Creek, and at mile 539.2.

DRAINAGE AREA.--2,829 mi^2.

REMARKS.--Extended to base period by stations 09430500 and 09432000. Diversions for irrigation of about 5,000 acres above station.

09432000 GILA RIVER BELOW BLUE CREEK, NEAR VIRDEN, N. MEX.

LOCATION.--Lat 32°38'53", long 108°50'43", in SE¼SW¼ sec.18, T.19 S., R.19 W., Grant County, Hydrologic Unit 15040002, on left bank at head of canyon, 1.4 mi downstream from Blue Creek, 10 mi east of Virden, 16 mi upstream from New Mexico-Arizona State line, and at mile 523.6.

DRAINAGE AREA.--3,203 mi^2, excluding Animas River Basin.

REMARKS.--Used as an index station. Diversions for irrigation of about 6,200 acres above station.

Table 3.--Gaging station descriptions - Continued

GILA RIVER BASIN - continued

09442680 SAN FRANCISCO RIVER NEAR RESERVE, N. MEX.

LOCATION.--Lat 33°44'12", long 108°46'14", in NE¼NW¼SE¼ sec.35, T.6 S., R.19 W., Catron County, Hydrologic Unit 15040004, on left bank 1,300 ft downstream from Rainbow Bridge Canyon, 1.7 mi northwest of Reserve, and at mile 563.1.

DRAINAGE AREA.--350 mi^2, approximately.

REMARKS.--Extended to base period by station 09444000. Possible minor regulation by Luna Lake, 27 mi upstream. Diversions for irrigation of about 500 acres above station.

09442692 TULAROSA RIVER ABOVE ARAGON, N. MEX.

LOCATION.--Lat 33°53'29", long 108°30'54", in NW¼ sec.9, T.5 S., R.16 W., Catron County, Hydrologic Unit 15040004, on right bank 0.4 mi upstream from first diversion, 1.4 mi northeast of Aragon, and 8 mi upstream from Apache Creek.

DRAINAGE AREA.--94 mi^2.

REMARKS.--Not extended to base period because there are no nearby stations with similar flow-duration characteristics.

09443000 SAN FRANCISCO RIVER NEAR ALMA, N. MEX.

LOCATION.--Lat 33°22'05", long 108°54'35", in SW¼SE¼ sec.4, T.11 S., R.20 W., Catron County, Hydrologic Unit 15040004, on right bank 1.2 mi downstream from Alma, 4 mi northwest of Glenwood, 6 mi upstream from Whitewater Creek, and at mile 523.5.

DRAINAGE AREA.--1,546 mi^2.

REMARKS.--Extended to base period by station 09444000. Diversions for irrigation of about 1,500 acres above station.

Table 3.--Gaging station descriptions - Concluded

GILA RIVER BASIN - concluded

09443500 WHITEWATER CREEK NEAR MOGOLLON, N. MEX.

LOCATION.--Lat 33°22'00", long 108°48'30", in SW¼ sec.4, T.11 S., R.19 W., Catron County, Hydrologic Unit 15040004, about 500 ft downstream from South Fork, and 2.5 mi south of Mogollon.

DRAINAGE AREA.--34 mi^2, approximately.

REMARKS.--Classed as a satellite station but not extended to base period.

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, N. MEX.

LOCATION.--Lat 33°14'48", long 108°52'47", in NE¼NW¼ sec.23, T.12 S., R.20 W., Catron County, Hydrologic Unit 15040004, on left bank 0.2 mi upstream from hot springs, 5 mi south of Glenwood, 6 mi downstream from Whitewater Creek, and at mile 511.5.

DRAINAGE AREA.--1,653 mi^2.

REMARKS.--Used as an index station. Diversions for irrigation of about 2,000 acres above station.

09454000 SAN SIMON RIVER NEAR RODEO, N. MEX.

LOCATION.--Lat 31°58'53", long 109°01'10", in SE¼ sec.6, T.27 S., R.21 W., Hidalgo County, Hydrologic Unit 15040006, and 10 mi north of Rodeo.

DRAINAGE AREA.--497 mi^2.

REMARKS.--Not extended to base period; no concurrent records. No diversions above station.

BEST DOCUMENT AVAILABLE

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record

[Percent of time indicated flow was equaled or exceeded]

Percent	Station number and periods							
	07127500		07153500		07154500		07199000	
	1931-60	1931-73	1943-73	1931-73	1951-73	1931-73	1947-73	1931-73
0.1	-	1,700	1,150	1,470	3,750	4,600	640	920
.2	-	1,280	700	910	2,150	2,860	440	650
.5	-	900	310	425	920	1,280	240	395
1	-	680	145	202	420	600	140	240
2	-	500	62.0	84.0	156	242	75.0	122
5	-	310	18.3	24.5	31.0	66.0	24.0	36.0
10	-	185	7.90	9.00	10.6	22.0	7.50	9.00
20	-	92.0	4.80	4.90	4.50	9.40	2.70	3.10
30	-	56.0	3.70	3.75	2.90	5.40	1.17	1.57
40	-	40.0	3.06	3.06	2.14	3.35	.65	.88
50	-	30.2	2.62	2.62	1.55	2.28	.37	.50
60	-	24.2	2.22	2.18	1.06	1.46	.21	.27
70	-	29.0	1.83	1.77	.60	.86	.11	.14
80	-	16.0	1.38	1.32	.21	.36	.05	.07
90	-	12.0	.82	.81	0	.02	.02	.02
95	-	8.90	.42	.42	-	0	.01	.01
98	-	5.60	.12	.12	-	-	0	0
99	-	3.80	0	0	-	-	-	-
99.5	-	2.40	-	-	-	-	-	-
99.8	-	1.10	-	-	-	-	-	-
99.9	-	.50	-	-	-	-	-	-
Average	-	76.8	10.4	12.5	23.7	32.2	8.16	-

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	07203000		07205000		07206300		07206400	
	(a)	1931-73	1959-73	-	1962-68	-	1962-68	1931-73
0.1	625	625	34.5	-	22.2	-	48.0	48.0
.2	450	450	30.4	-	19.9	-	38.6	38.6
.5	290	290	25.0	-	16.5	-	27.3	28.7
1	196	196	20.9	-	13.8	-	20.5	21.8
2	128	128	16.3	-	10.8	-	15.3	15.4
5	71.0	71.0	9.10	-	6.45	-	9.40	9.00
10	43.0	41.0	5.00	-	3.37	-	5.00	4.80
20	22.2	21.0	2.95	-	1.65	-	2.15	2.07
30	13.5	12.5	2.25	-	1.17	-	1.28	1.21
40	9.30	8.50	1.79	-	.97	-	.87	.81
50	6.70	6.20	1.47	-	.87	-	.65	.61
60	5.10	4.70	1.18	-	.81	-	.52	.49
70	3.90	3.55	.95	-	.76	-	.43	.41
80	2.70	2.43	.70	-	.69	-	.37	.35
90	1.52	1.34	.46	-	.59	-	.31	.28
95	.89	.78	.31	-	.52	-	.27	.23
98	.42	.37	.20	-	.46	-	.24	.19
99	.22	.20	.15	-	.43	-	.22	.17
99.5	.11	.10	.12	-	.40	-	.21	.15
99.8	0	0	.09	-	.37	-	.20	.13
99.9	-	-	.08	-	.35	-	.19	.12
Average	18.7	18.5	2.49	-	1.67	-	2.12	2.00

(a): 1916, 1917, 1920, 1928-73

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	07207000		07207500		07208500		07211000	
	1951-73	-	1951-73	1931-73	-	1931-73	-	1931-73
0.1	198	-	233	294	-	365	-	1,120
.2	167	-	200	233	-	280	-	870
.5	133	-	152	173	-	200	-	580
1	110	-	119	127	-	142	-	365
2	89.0	-	86.0	87.0	-	95.0	-	185
5	65.0	-	47.0	46.0	-	52.0	-	54.0
10	49.5	-	21.5	24.0	-	29.0	-	18.7
20	34.5	-	8.30	9.00	-	13.6	-	8.90
30	25.2	-	4.65	5.00	-	8.40	-	6.25
40	18.0	-	3.00	3.30	-	6.15	-	4.95
50	12.2	-	2.15	2.35	-	4.95	-	4.03
60	7.30	-	1.55	1.63	-	4.15	-	3.32
70	4.65	-	1.07	1.13	-	3.60	-	2.73
80	3.30	-	.58	.70	-	3.10	-	2.05
90	2.40	-	.13	.25	-	2.51	-	1.26
95	1.76	-	0	0	-	2.06	-	.68
98	1.04	-	-	-	-	1.60	-	.21
99	.56	-	-	-	-	1.32	-	.17
99.5	.25	-	-	-	-	1.10	-	.09
99.8	.07	-	-	-	-	.90	-	.03
99.9	-	-	-	-	-	.77	-	.01
Average	20.0	-	9.00	9.74	-	13.3	-	18.4

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	07211500		07214000		07214500		07214800	
	1940-58 1965-73	1931-73	1937-65	1931-73	1954-73	1931-73	1957-70	1931-73
0.1	7,200	5,950	12,000	8,000	330	353	190	198
.2	4,500	3,850	6,500	5,000	273	292	160	175
.5	2,350	2,080	3,130	2,610	200	213	128	142
1	1,400	1,250	1,900	1,570	150	162	105	118
2	800	680	1,100	900	103	106	85.0	94.0
5	325	270	450	373	55.0	55.0	60.0	64.0
10	137	119	193	174	30.0	32.0	39.0	39.5
20	49.0	44.5	70.0	67.0	15.3	16.0	20.9	18.7
30	27.5	27.5	36.4	36.4	10.0	10.3	13.2	11.3
40	19.6	20.0	23.5	23.2	7.50	7.70	8.50	7.60
50	15.0	15.3	16.4	16.5	5.80	6.00	5.90	5.70
60	11.4	11.5	11.6	12.3	4.60	4.80	4.45	4.50
70	8.50	8.30	7.80	8.60	3.65	3.80	3.65	3.75
80	5.80	5.40	4.50	4.80	2.80	2.83	3.00	3.15
90	3.10	2.90	1.40	1.45	1.85	1.94	2.34	2.50
95	1.55	1.40	.20	.20	1.27	1.44	1.88	1.99
98	.20	.16	0	0	.81	.94	1.12	1.42
99	0	0	-	-	.60	.57	.80	1.07
99.5	-	-	-	-	.44	.19	.63	.80
99.8	-	-	-	-	.31	-	.50	.58
99.9	-	-	-	-	.23	-	.43	.47
Average	94.2	78.2	132	105	13.9	14.6	14.4	14.8

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	07216500		07217000		07217100		07218000	
	-	1931-73	1954-63	1931-73	1957-73	1931-73	-	1931-73
0.1	-	820	137	176	240	194	-	370
.2	-	680	116	131	190	155	-	288
.5	-	500	85.0	89.0	134	114	-	200
1	-	385	62.0	60.0	97.0	87.0	-	143
2	-	260	39.0	38.0	67.0	62.0	-	92.0
5	-	140	17.0	18.3	35.5	33.0	-	42.0
10	-	82.0	9.40	10.6	20.7	18.4	-	23.0
20	-	39.0	5.15	5.50	10.8	9.50	-	12.4
30	-	24.0	3.38	3.65	7.20	6.40	-	8.70
40	-	16.8	2.41	2.70	5.50	5.00	-	6.50
50	-	12.0	1.73	2.03	4.45	4.20	-	4.98
60	-	8.20	1.06	1.46	3.65	3.52	-	3.74
70	-	5.20	.48	.96	2.95	2.90	-	2.75
80	-	2.95	.22	.55	2.30	2.33	-	1.90
90	-	1.47	.10	.21	1.60	1.77	-	1.16
95	-	.86	.07	.09	1.16	1.33	-	.76
98	-	.44	-	-	.82	.87	-	.48
99	-	.23	-	-	.68	.62	-	.35
99.5	-	.09	-	-	.58	.44	-	.26
99.8	-	.03	-	-	.48	.30	-	.19
99.9	-	.01	-	-	.42	.23	-	.15
Average	-	33.5	4.62	-	9.77	8.92	-	11.9

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	07220680		07221980		07221990		07222500	
	1957-73	1931-73	1920-24, 1928-73	1931-73	1917-73	1931-73	1917-73	1931-73
0.1	740	720	2,450	2,600	13,600	12,300	1,750	1,750
.2	580	570	1,820	1,900	8,080	7,800	1,060	1,050
.5	410	385	1,170	1,170	4,280	4,230	540	535
1	290	275	800	770	2,640	2,630	310	305
2	185	165	504	470	1,600	1,580	154	151
5	85.0	79.0	236	225	750	740	40.0	39.0
10	45.0	44.0	134	117	368	368	11.3	11.0
20	23.0	21.2	59.0	55.0	154	152	3.00	2.90
30	14.5	12.8	36.3	33.5	88.0	88.0	1.24	1.15
40	10.0	8.30	23.8	22.0	58.0	58.0	.55	.52
50	7.10	6.00	16.8	14.3	40.0	40.0	.25	.24
60	5.10	4.12	8.30	7.80	27.5	27.5	.11	.10
70	3.55	2.82	4.15	3.70	17.8	17.8	.04	.038
80	2.10	1.80	2.50	2.26	10.0	10.0	.01	.01
90	.82	.66	1.44	1.26	3.60	3.60	0	0
95	.30	.20	.77	.64	.75	.75	-	-
98	.07	.03	.30	.23	.05	.05	-	-
99	0	0	.05	.04	0	0	-	-
99.5	-	-	0	0	-	-	-	-
99.8	-	-	-	-	-	-	-	-
99.9	-	-	-	-	-	-	-	-
Average	21.2	-	59.3	56.6	205	191	16.7	15.1

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	07226500		07227100		07227200		07232500	
	1943-73	1931-73	1960-73	-	1967-73	1931-73	1938-73	1931-73
0.1	2,700	4,780	6,500	-	543	900	3,650	3,650
.2	1,770	2,970	3,900	-	372	630	2,300	2,300
.5	960	1,460	1,730	-	190	360	1,000	1,000
1	560	805	850	-	102	205	600	600
2	295	400	380	-	43.0	103	137	135
5	90	119	129	-	9.20	34.0	32.5	32.5
10	25.0	36.2	60.0	-	2.70	10.3	16.7	16.7
20	4.20	6.15	31.0	-	.67	3.00	10.6	10.6
30	.60	1.00	20.4	-	0	.94	8.50	8.50
40	0	.10	13.3	-	-	.07	7.10	7.10
50	-	0	8.20	-	-	0	5.90	5.90
60	-	-	4.60	-	-	-	4.45	4.35
70	-	-	2.20	-	-	-	2.70	2.62
80	-	-	.75	-	-	-	1.40	1.38
90	-	-	0	-	-	-	.47	.52
95	-	-	-	-	-	-	0	0
98	-	-	-	-	-	-	-	-
99	-	-	-	-	-	-	-	-
99.5	-	-	-	-	-	-	-	-
99.8	-	-	-	-	-	-	-	-
99.9	-	-	-	-	-	-	-	-
Average	26.8	41.9	-	-	4.37	9.47	27.0	26.1

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08251500		08263000		08263500		08264000	
	(b)	1931-73	1946-70	1931-73	1949-73	1931-73	1944-55 1963-64	1931-73
0.1	11,000	6,700	54.0	77.0	5,750	6,750	160	167
.2	9,600	5,980	48.0	71.0	4,300	6,030	148	157
.5	7,900	4,900	40.0	60.0	3,340	4,950	130	139
1	6,600	4,000	33.0	48.0	2,830	3,990	113	122
2	5,250	3,000	26.0	36.0	2,210	3,040	92.0	102
5	3,350	1,720	17.4	22.0	1,240	1,760	64.0	68.0
10	2,030	860	11.6	13.0	750	890	39.0	44.6
20	980	465	6.70	7.20	475	505	20.5	23.6
30	645	343	4.90	5.00	358	383	12.6	14.3
40	514	270	3.85	4.00	284	310	8.80	10.9
50	440	206	3.22	3.34	225	246	6.80	7.45
60	370	153	2.80	2.94	175	193	5.60	6.13
70	295	104	2.50	2.61	132	144	4.85	5.15
80	210	65.0	2.24	2.27	100	108	4.18	4.40
90	105	33.5	1.92	2.00	73.0	79.0	3.47	3.62
95	57.5	17.7	1.68	1.74	60.0	64.0	3.00	3.11
98	29.3	8.50	1.45	1.47	52.0	54.0	2.62	2.67
99	18.8	4.40	1.31	1.28	48.0	50.0	2.44	2.41
99.5	12.5	1.10	1.20	1.13	47.0	48.0	2.30	2.24
99.8	8.50	0	1.07	.92	46.0	47.0	2.18	2.04
99.9	7.0	-	1.00	.78	45.0	46.0	2.11	1.03
Average	846	412	5.39	6.26	377	455	15.5	17.3

(b): 1902, 1910-12, 1915-30

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08264500		08265000		08266000		08267000	
	1964-73	1931-73	1931-73(c)	1931-73(d)	1944-73	1931-73	1952-73	1931-73
0.1	173	232	565	558	129	155	510	680
.2	155	217	514	507	115	141	478	618
.5	130	190	433	426	92.0	115	423	525
1	112	162	360	353	70.0	90.0	360	444
2	92.0	132	290	283	48.0	62.3	275	360
5	63.0	84.0	182	175	26.8	31.4	188	233
10	42.0	53.0	113	105	16.8	18.7	137	154
20	23.0	27.4	59.0	50.0	11.8	12.4	91.0	96.0
30	16.2	17.7	37.5	30.6	9.20	9.70	72.0	75.0
40	12.2	12.9	29.8	22.3	7.20	7.60	63.5	66.0
50	9.60	10.0	24.5	17.1	5.90	6.23	58.0	60.0
60	7.90	8.43	21.2	14.2	5.12	5.30	54.5	56.5
70	6.60	7.20	19.0	11.5	4.50	4.72	51.5	53.3
80	5.65	6.20	17.2	9.20	4.00	4.15	49.0	50.6
90	4.70	5.18	14.9	6.20	3.43	3.50	46.0	47.4
95	4.15	4.45	13.2	4.44	2.99	2.99	44.0	44.8
98	3.66	3.84	11.3	3.30	2.52	2.47	42.0	42.3
99	3.42	3.48	10.1	2.75	2.21	2.07	40.6	40.4
99.5	3.25	3.25	9.20	2.35	1.91	1.74	39.7	39.0
99.8	3.10	2.99	7.90	1.90	1.62	1.23	38.4	37.0
99.9	3.00	2.86	7.10	1.70	1.41	.95	37.8	36.0
Average	17.7	21.2	49.4	-	9.58	10.7	78.4	86.7

(c): 1931-65 conditions; before tailings pipeline bypass

(d): 1966-73 conditions

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08267500		08268500		08268700		08269000	
	1935-73	1931-73	1927-28, 1933-73	1931-73	1964-73	1931-73	1941-51, 1964-73	1931-73
0.1	333	333	375	370	4,200	7,210	510	440
.2	311	311	331	320	3,880	6,650	440	386
.5	274	274	273	251	3,330	5,640	345	306
1	237	237	227	201	2,840	4,650	274	248
2	196	196	176	150	2,290	3,470	198	190
5	128	128	102	84.0	1,490	2,100	112	110
10	83.0	83.0	53.0	45.0	1,050	1,160	64.0	65.0
20	44.5	44.5	26.7	24.0	730	654	29.7	31.0
30	29.0	29.0	20.4	19.3	595	520	18.0	18.0
40	22.0	22.0	18.0	17.4	505	444	12.8	12.5
50	17.7	17.7	16.0	15.3	437	388	9.90	9.70
60	15.3	15.3	14.2	13.7	380	335	8.40	8.30
70	13.4	13.4	12.0	11.7	313	287	7.30	7.18
80	11.8	11.8	9.60	9.60	254	242	6.40	6.30
90	10.1	10.1	7.70	7.70	207	203	5.36	5.30
95	8.80	8.80	6.75	6.80	184	182	4.75	4.68
98	7.60	7.60	5.90	6.10	169	166	4.06	3.93
99	6.80	6.80	5.42	5.80	163	158	3.72	3.50
99.5	6.20	6.20	5.03	5.50	158	153	3.40	3.14
99.8	5.40	5.40	4.65	5.20	153	148	3.10	2.75
99.9	4.90	4.90	4.40	5.00	150	146	2.90	2.50
Average	24.5	34.9	27.6	24.8	571	620	27.2	26.5

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08271000		08275000		08275300		08275500	
	1935-51 1964-73	1931-73	1964-73	1931-73	1958-73	1931-73	1953-73	1931-73
0.1	225	212	163	218	525	642	323	441
.2	210	197	122	177	460	553	284	404
.5	185	173	80.0	124	356	424	230	341
1	159	150	55.0	89.0	270	327	188	280
2	129	120	36.0	59.0	181	235	145	217
5	85.0	80.0	18.0	26.3	95.0	125	87.0	124
10	54.0	51.0	9.40	12.5	52.0	61.5	45.5	63.2
20	27.5	27.5	4.20	5.00	30.0	31.2	21.2	24.6
30	18.4	18.0	2.67	2.90	23.6	23.6	13.5	14.8
40	14.1	13.6	1.98	2.08	20.5	20.1	9.80	10.8
50	11.3	10.7	1.53	1.62	17.8	17.3	7.70	8.45
60	9.20	8.83	1.16	1.32	15.0	15.0	6.45	7.18
70	7.70	7.50	.86	1.00	11.8	11.9	5.50	6.19
80	6.50	6.45	.56	.72	7.40	7.82	4.75	5.30
90	5.45	5.45	.22	.35	3.60	4.10	3.75	4.20
95	4.90	4.80	.10	.15	2.40	2.62	3.00	3.28
98	4.28	4.28	.05	.06	1.68	1.63	2.30	2.43
99	3.90	3.93	.042	.046	1.32	1.22	1.95	1.92
99.5	3.62	3.65	.036	.038	1.10	.92	1.70	1.58
99.8	3.30	3.30	.032	.033	.88	.65	1.44	1.22
99.9	3.10	3.04	.029	.030	.77	.52	1.30	1.02
Average	22.1	21.4	4.45	6.19	28.1	32.4	19.7	26.1

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08275600		08276000		08276300		08276500	
	1958-73	1931-73	1911-25, 1927-65	1931-73	1958-73	1931-73	1926-73	1931-73
0.1	139	182	1,170	1,180	975	1,187	8,470	8,470
.2	122	165	1,000	1,010	834	1,015	7,800	7,800
.5	97.0	136	765	765	643	769	6,600	6,600
1	77.0	109	590	580	495	583	5,430	5,430
2	57.0	82.0	430	408	351	410	4,120	4,120
5	32.0	42.5	240	209	165	210	2,500	2,430
10	17.3	22.0	125	99.0	79.0	99.0	1,350	1,280
20	8.50	9.40	56.0	48.0	45.5	48.0	760	720
30	5.80	6.12	40.0	35.6	35.0	35.4	600	570
40	4.55	4.76	32.5	30.0	29.7	30.0	520	497
50	3.83	3.90	27.7	25.7	26.2	26.2	453	440
60	3.25	3.37	23.8	22.0	23.0	22.7	396	385
70	2.86	2.94	19.2	17.5	18.7	18.6	332	330
80	2.45	2.53	14.0	12.1	13.0	13.5	284	281
90	2.00	2.03	7.60	6.90	7.40	8.20	239	236
95	1.70	1.59	5.40	4.90	5.53	5.95	212	211
98	1.37	1.13	3.90	3.60	4.30	4.33	191	190
99	1.18	.82	3.20	3.00	3.80	3.66	181	180
99.5	1.00	.58	2.71	2.55	3.40	3.10	175	173
99.8	.81	.33	2.25	2.14	3.07	2.62	170	167
99.9	.68	.20	2.00	1.92	2.90	2.35	167	164
Average	8.11	9.95	58.5	52.6	41.8	53.3	728	706

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08278500		08279000		08279500		08281100	
	1952-57	1931-73	1931-55, 1963-73	1931-73	1890-1903, 1913-1973	1931-73	1964-73	1931-73
0.1	296	530	1,310	1,310	10,700	9,800	5,780	9,880
.2	272	478	1,130	1,120	9,500	8,940	5,390	8,920
.5	232	398	903	900	7,900	7,520	4,680	7,500
1	205	331	720	720	6,600	6,160	3,980	6,140
2	165	253	560	568	5,300	4,700	2,880	4,680
5	116	162	345	358	3,460	2,800	1,830	2,780
10	80.0	103	193	198	2,060	1,490	1,280	1,470
20	44.2	55.4	82.0	82.0	1,000	815	830	795
30	25.0	34.0	51.0	51.2	730	640	690	620
40	15.5	23.5	38.5	39.2	610	555	600	535
50	11.2	17.8	32.3	32.4	530	487	529	466
60	8.70	13.3	28.0	28.3	465	427	458	405
70	7.30	10.6	23.6	23.8	398	363	376	339
80	6.30	8.40	18.6	18.6	330	308	299	282
90	5.25	6.70	11.3	11.2	265	256	236	228
95	4.70	5.90	6.70	6.20	232	226	202	195
98	4.15	5.10	3.60	3.18	203	203	177	170
99	3.86	4.70	2.36	2.10	190	192	164	158
99.5	3.65	4.39	1.58	1.45	178	183	154	148
99.8	3.43	4.00	.97	.98	165	177	146	141
99.9	3.30	3.75	.67	.77	157	173	141	137
Average	29.0	41.1	78.4	78.6	937	791	700	773

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08283500		08284100		08284200		08284300	
	1931-55	1931-73	1956-73	1931-73	1964-70	-	1963-73	1931-73
0.1	5,300	5,000	5,200	5,600	475	-	67.0	73.0
.2	4,800	4,500	4,700	5,000	400	-	54.0	62.0
.5	4,100	3,810	3,900	4,250	296	-	37.0	48.0
1	3,500	3,220	3,300	3,570	212	-	27.0	36.5
2	2,820	2,600	2,600	2,880	131	-	16.6	26.0
5	1,810	1,650	1,620	1,830	48.0	-	5.20	10.0
10	1,000	940	890	1,030	15.5	-	1.00	2.10
20	360	335	345	350	5.80	-	.08	.10
30	140	142	163	157	3.45	-	0	0
40	82.0	84.0	103	98.0	2.23	-	-	-
50	60.0	61.0	77.0	74.3	1.36	-	-	-
60	48.5	49.0	61.0	60.0	.73	-	-	-
70	40.0	40.3	49.0	48.5	.38	-	-	-
80	32.5	33.0	38.0	38.0	.19	-	-	-
90	23.0	21.6	25.0	26.0	.08	-	-	-
95	14.6	12.7	16.9	18.2	.03	-	-	-
98	7.40	5.50	10.9	11.8	0	-	-	-
99	4.50	3.50	8.40	9.30	-	-	-	-
99.5	3.25	2.46	7.00	7.60	-	-	-	-
99.8	2.35	1.66	6.00	6.00	-	-	-	-
99.9	1.95	1.30	5.50	5.20	-	-	-	-
Average	328	311	313	341	11.0	-	1.10	1.64

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08284500		08285500		08286500		08288000	
	1941-63(e)	1964-70(e)	1937-73	-	1962-73	-	1932-50	1931-73
0.1	1,190	640	4,710	-	4,700	-	515	445
.2	900	540	4,100	-	4,050	-	436	370
.5	600	395	3,250	-	3,110	-	335	280
1	410	280	2,550	-	2,350	-	264	213
2	243	175	1,880	-	1,710	-	196	153
5	84.0	69.0	1,350	-	1,240	-	112	85.0
10	29.0	25.8	1,090	-	990	-	51.0	40.7
20	8.00	11.8	685	-	506	-	12.5	10.1
30	4.20	8.00	390	-	320	-	5.20	4.50
40	3.00	5.90	180	-	190	-	3.30	3.00
50	2.20	4.25	92.0	-	124	-	2.48	2.25
60	1.30	3.05	58.4	-	96.0	-	2.02	1.80
70	.20	1.99	34.3	-	76.0	-	1.66	1.45
80	0	1.14	15.7	-	59.0	-	1.34	1.12
90	-	.43	5.20	-	42.0	-	1.02	.82
95	-	.15	2.60	-	32.5	-	.82	.59
98	-	0	1.37	-	24.7	-	.64	.40
99	-	-	.80	-	20.4	-	.54	.31
99.5	-	-	.58	-	17.0	-	.47	.25
99.8	-	-	.44	-	13.3	-	.40	.19
99.9	-	-	.36	-	11.0	-	.35	.16
Average	18.9	16.2	361	-	350	-	18.8	15.2

(e): Flow-duration data presented for two periods due to apparent change in conditions (see table 3). Not extended to base period.

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08289000		08290000		08291000		08292000	
	-	1931-73	1936-73	-	-	1931-73	1937-41 1950	-
0.1	-	1,800	6,900	-	-	373	40.0	-
.2	-	1,570	5,850	-	-	336	37.0	-
.5	-	1,240	4,500	-	-	274	31.4	-
1	-	970	3,520	-	-	225	25.7	-
2	-	700	2,570	-	-	168	17.4	-
5	-	360	1,750	-	-	107	7.80	-
10	-	158	1,380	-	-	69.8	5.95	-
20	-	51.0	840	-	-	38.0	5.00	-
30	-	27.5	525	-	-	23.7	4.55	-
40	-	21.0	310	-	-	17.7	4.24	-
50	-	17.2	176	-	-	14.2	3.98	-
60	-	14.5	115	-	-	11.9	3.74	-
70	-	11.4	79.0	-	-	10.2	3.50	-
80	-	8.30	54.0	-	-	8.70	3.21	-
90	-	5.30	30.3	-	-	7.30	2.78	-
95	-	3.90	13.5	-	-	6.13	2.43	-
98	-	2.85	4.50	-	-	4.75	2.03	-
99	-	2.30	1.64	-	-	3.97	1.73	-
99.5	-	1.84	.69	-	-	3.30	1.42	-
99.8	-	1.42	.32	-	-	2.67	1.07	-
99.9	-	1.20	.20	-	-	2.33	.84	-
Average	-	69.7	488	-	-	29.1	4.58	-

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08294300		08295000		08302200		08302500	
	1964-73	1931-73	1933-51	1931-73	1963-70	1931-73	1937-51	1931-73
0.1	135	130	136	132	10.7	21.8	47.0	44.0
.2	120	116	123	117	9.85	19.2	43.0	39.0
.5	93.0	93.0	102	94.0	8.80	15.4	35.5	30.5
1	72.0	76.0	82.0	76.0	7.75	12.7	29.0	24.0
2	51.0	56.5	62.0	55.0	6.60	9.80	21.3	17.3
5	30.5	36.2	38.0	34.5	4.88	6.60	12.8	10.5
10	21.4	24.6	24.5	22.6	3.50	4.12	7.90	6.80
20	13.7	15.3	14.0	13.5	2.15	2.15	4.20	3.85
30	10.0	10.3	9.00	9.10	1.54	1.45	2.45	2.45
40	8.00	7.80	6.70	6.90	1.18	1.13	1.80	1.82
50	6.78	6.35	5.40	5.58	.92	.92	1.43	1.43
60	5.75	5.36	4.50	4.70	.72	.74	1.20	1.21
70	5.00	4.60	3.87	4.00	.58	.62	1.02	1.03
80	4.33	4.00	3.34	3.30	.50	.53	.87	.89
90	3.82	3.50	2.60	2.60	.44	.45	.66	.70
95	3.45	3.08	1.92	1.92	.41	.40	.51	.52
98	3.14	2.46	1.14	1.06	.38	.35	.37	.25
99	2.88	2.09	.83	.77	.36	.33	.29	.10
99.5	2.60	1.76	.64	.59	.34	.31	.22	.02
99.8	2.30	1.44	.50	.45	.32	.29	.15	0
99.9	2.10	1.28	.43	.40	.31	.28	.11	-
Average	11.0	11.3	10.6	10.3	1.50	1.76	3.21	2.95

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08313000		08318000		08319000		08321500	
	(f)	1965-73(g)	1942-70	-	-	1931-73	1959-73	1931-73
0.1	17,700	7,000	1,200	-	-	15,200	550	850
.2	15,600	6,580	850	-	-	13,200	450	720
.5	12,800	5,950	470	-	-	11,000	332	540
1	10,600	5,360	243	-	-	9,100	252	405
2	8,500	4,730	105	-	-	7,100	177	274
5	5,520	3,700	21.0	-	-	4,500	87.0	125
10	3,370	2,730	3.10	-	-	2,800	44.0	56.0
20	1,820	1,650	.29	-	-	1,620	23.0	28.0
30	1,220	1,180	0	-	-	1,155	20.0	21.0
40	930	970	-	-	-	912	17.2	18.0
50	770	830	-	-	-	760	15.3	15.4
60	656	740	-	-	-	660	13.8	13.9
70	570	640	-	-	-	570	12.7	12.7
80	470	520	-	-	-	465	11.6	11.7
90	342	370	-	-	-	320	10.4	10.2
95	263	300	-	-	-	225	9.40	9.00
98	195	250	-	-	-	151	8.30	7.90
99	161	230	-	-	-	115	7.70	7.20
99.5	138	217	-	-	-	90	7.20	6.65
99.8	115	206	-	-	-	67	6.60	6.00
99.9	104	200	-	-	-	53	6.20	5.60
Average	1,458	1,227	10.2	-	-	1,330	24.4	34.2

(f): 1896-1905, 1910-14, 1919-73
(g): Flow-duration data for period indicated (see table 3). Not used as a base period.

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08323000		08324000		08329500		08329900	
	(h)	1931-73	(i)	1931-73	1942-69	-	1969-73	-
0.1	1,100	1,110	1,830	2,020	14,700	-	287	-
.2	900	940	1,480	1,690	12,500	-	235	-
.5	660	720	1,050	1,250	9,900	-	167	-
1	490	550	770	930	8,000	-	116	-
2	340	385	530	640	6,300	-	72.0	-
5	190	207	280	333	4,030	-	26.5	-
10	96.0	100	150	166	2,550	-	8.50	-
20	38.5	39.0	77.0	77.0	1,430	-	1.20	-
30	23.4	24.0	50.0	50.0	960	-	0	-
40	16.7	17.2	38.0	38.0	730	-	-	-
50	13.7	13.5	31.0	31.0	590		-	-
60	11.5	11.3	27.0	27.0	475	-	-	-
70	9.70	9.40	23.7	23.7	350	-	-	-
80	8.00	7.95	20.7	21.0	194	-	-	-
90	6.55	6.35	17.2	17.8	30	-	-	-
95	5.67	5.15	14.6	15.0	0	-	-	-
98	4.90	4.12	12.3	12.3	-	-	-	-
99	4.50	3.65	11.2	11.2	-	-	-	-
99.5	4.20	3.30	10.2	10.2	-	-	-	-
99.8	3.85	2.95	9.25	9.20	-	-	-	-
99.9	3.70	2.80	8.70	8.70	-	-	-	-
Average	44.6	44.9	68.7	82.1	1,076	-	5.19	-

(h): 1939-42, 1950, 1959-73
(i): 1937-40, 1950, 1954-73

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08330000		08332000		08334000		08340500	
	1943-73	-	(j)	-	1945-73	1935-73	1944-73	1935-73
0.1	12,600	-	16,000	-	645	710	2,030	2,220
.2	11,000	-	14,400	-	515	553	1,550	1,700
.5	8,900	-	11,600	-	347	373	970	1,060
1	7,300	-	9,500	-	236	254	600	660
2	5,650	-	7,200	-	150	163	305	350
5	3,720	-	4,340	-	69.0	80.0	79.0	106
10	2,430	-	2,570	-	32.0	38.2	16.3	23.5
20	1,330	-	1,260	-	7.80	11.0	1.40	2.40
30	890	-	820	-	1.70	2.84	.31	.50
40	710	-	670	-	.28	.44	.04	.07
50	600	-	530	-	.03	.10	0	0
60	460	-	365	-	0	0	-	-
70	314	-	200	-	-	-	-	-
80	150	-	76.0	-	-	-	-	-
90	36.0	-	21.0	-	-	-	-	-
95	7.5	-	7.2	-	-	-	-	-
98	0	-	1.7	-	-	-	-	-
99	-	-	.60	-	-	-	-	-
99.5	-	-	0	-	-	-	-	-
99.8	-	-	-	-	-	-	-	-
99.9	-	-	-	-	-	-	-	-
Average	994	-	1,033	-	13.0	15.3	23.3	26.7

(j): 1937-1938, 1942, 1944-64

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08343000		08343100		08343500		08351500	
	1950-66 1969-73	1935-73	1963-73	1935-73	1937-73	1935-73	1944-73	1935-73
0.1	137	160	40.0	36.0	200	213	1,040	1,160
.2	83.0	95.0	27.0	25.0	125	135	740	830
.5	38.5	42.0	14.5	14.4	61.0	66.0	450	495
1	17.0	17.5	7.30	8.10	32.5	34.5	275	303
2	3.60	3.70	1.12	1.62	16.0	16.8	139	160
5	1.78	2.15	0	0	9.10	9.20	35.3	47.5
10	1.14	1.55	-	-	7.00	7.05	10.3	13.0
20	0	.50	-	-	5.92	5.92	4.00	4.63
30	-	0	-	-	5.50	5.50	1.35	2.30
40	-	-	-	-	5.25	5.25	0	.35
50	-	-	-	-	5.07	5.07	-	0
60	-	-	-	-	4.95	4.95	-	-
70	-	-	-	-	4.78	4.78	-	-
80	-	-	-	-	4.60	4.60	-	-
90	-	-	-	-	4.42	4.42	-	-
95	-	-	-	-	4.25	4.25	-	-
98	-	-	-	-	4.00	4.00	-	-
99	-	-	-	-	3.82	3.82	-	-
99.5	-	-	-	-	3.64	3.64	-	-
99.8	-	-	-	-	3.38	3.38	-	-
99.9	-	-	-	-	3.20	3.20	-	-
Average	0.87	1.09	0.23	0.24	6.52	6.50	12.2	13.5

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08352500		08353000		08354000		08358500	
	-	1935-73	1941-73	1935-73	1948-73	1935-73	1931-64	-
0.1	-	4,300	4,200	4,300	1,710	2,060	16,500	-
.2	-	3,200	3,120	3,200	1,260	1,480	14,600	-
.5	-	2,000	1,880	2,000	750	860	11,700	-
1	-	1,260	1,170	1,260	450	505	9,500	-
2	-	710	650	710	230	265	7,200	-
5	-	254	226	253	46.0	67.0	4,350	-
10	-	84.0	68.0	78.0	2.20	5.40	2,490	-
20	-	16.4	7.60	9.00	0	0	1,230	-
30	-	4.90	.10	.90	-	-	840	-
40	-	1.60	0	0	-	-	665	-
50	-	.43	-	-	-	-	510	-
60	-	0	-	-	-	-	354	-
70	-	-	-	-	-	-	210	-
80	-	-	-	-	-	-	86.0	-
90	-	-	-	-	-	-	19.4	-
95	-	-	-	-	-	-	4.6	-
98	-	-	-	-	-	-	0	-
99	-	-	-	-	-	-	-	-
99.5	-	-	-	-	-	-	-	-
99.8	-	-	-	-	-	-	-	-
99.9	-	-	-	-	-	-	-	-
Average	-	59.2	51.4	57.3	16.9	20.1	1,030	-

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08360000		08377900		08378500		08379200	
	1932-41 1959-71	-	1964-73	1931-73	-	1931-73	1961-65	1931-73
0.1	138	-	480	528	-	1,230	360	395
.2	94.0	-	423	456	-	1,080	259	300
.5	55.0	-	340	357	-	870	157	191
1	35.0	-	263	284	-	710	104	126
2	19.6	-	183	215	-	550	66.0	78.0
5	10.7	-	108	136	-	370	33.4	39.7
10	8.60	-	67.0	80.6	-	230	18.3	21.4
20	7.70	-	38.4	41.0	-	122	9.60	10.1
30	7.40	-	26.0	25.3	-	79.5	6.30	6.00
40	7.25	-	18.3	17.0	-	58.5	4.55	4.10
50	7.06	-	13.3	12.1	-	45.5	3.48	3.03
60	6.94	-	9.80	8.90	-	36.3	2.67	2.35
70	6.80	-	7.30	6.80	-	29.8	2.02	1.78
80	6.60	-	5.50	5.40	-	25.1	1.37	1.17
90	6.30	-	4.30	4.12	-	20.8	.66	.37
95	6.10	-	3.50	3.20	-	18.0	.28	0
98	5.90	-	2.75	2.15	-	14.7	.08	-
99	5.75	-	2.30	1.60	-	12.6	0	-
99.5	5.60	-	2.00	1.20	-	11.0	-	-
99.8	5.46	-	1.67	.83	-	9.10	-	-
99.9	5.38	-	1.47	.64	-	8.00	-	-
Average	8.27	-	29.3	32.1	-	95.2	9.48	10.1

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08379500		08380500		08382500		08383000	
	-	1931-73	-	1931-73	1952-73	1931-73	-	1931-73
0.1	-	2,630	-	503	1,060	1,810	-	6,300
.2	-	2,200	-	405	830	1,210	-	4,500
.5	-	1,630	-	280	565	710	-	2,700
1	-	1,230	-	198	400	455	-	1,800
2	-	870	-	128	250	270	-	1,130
5	-	540	-	72.0	100	111	-	540
10	-	340	-	43.0	24.5	33.0	-	265
20	-	168	-	22.0	4.00	7.50	-	103
30	-	88.0	-	13.3	.50	1.94	-	47.0
40	-	52.5	-	9.05	0	0	-	33.0
50	-	36.0	-	6.70	-	-	-	26.0
60	-	25.8	-	5.20	-	-	-	22.0
70	-	17.7	-	4.10	-	-	-	18.5
80	-	11.3	-	3.30	-	-	-	14.9
90	-	5.00	-	2.44	-	-	-	11.2
95	-	1.80	-	1.80	-	-	-	8.90
98	-	.20	-	1.11	-	-	-	6.90
99	-	0	-	.77	-	-	-	5.80
99.5	-	-	-	.57	-	-	-	5.05
99.8	-	-	-	.42	-	-	-	4.30
99.9	-	-	-	.35	-	-	-	3.80
Average	-	125	-	18.8	18.6	23.2	-	131

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08383500		08384500		08386000		08387000	
	1939-73	1931-73	1938-73	-	1938-73	-	1954-73	-
0.1	7,200	8,000	5,500	-	11,000	-	151	-
.2	5,100	5,600	3,750	-	5,950	-	136	-
.5	3,200	3,310	2,340	-	3,000	-	112	-
1	2,130	2,200	1,800	-	2,000	-	93.0	-
2	1,410	1,420	1,390	-	1,440	-	73.0	-
5	690	710	1,160	-	1,000	-	47.5	-
10	370	377	840	-	690	-	30.6	-
20	190	194	107	-	146	-	17.9	-
30	132	132	88.0	-	61.0	-	12.3	-
40	114	114	84.0	-	34.3	-	8.90	-
50	105	104	79.0	-	21.5	-	6.70	-
60	100	97.5	67.0	-	14.0	-	5.15	-
70	94.0	91.5	10.0	-	8.50	-	4.13	-
80	87.0	85.5	2.7	-	3.30	-	3.23	-
90	77.5	76.0	.92	-	0	-	2.34	-
95	70.0	69.4	.41	-	-	-	1.82	-
98	62.0	61.3	.23	-	-	-	1.38	-
99	56.5	55.8	.15	-	-	-	1.15	-
99.5	51.8	51.4	.10	-	-	-	.97	-
99.8	46.5	46.5	.05	-	-	-	.80	-
99.9	43.0	43.0	.03	-	-	-	.70	-
Average	218	223	200	-	192	-	12.9	-

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08387600		08388000		08389500		08390500	
	1970-76	-	1931-55	-	1931-55	-	1940-73	-
0.1	50.6	-	720	-	770	-	1,610	-
.2	42.0	-	465	-	485	-	1,030	-
.5	31.0	-	270	-	253	-	556	-
1	23.7	-	182	-	153	-	340	-
2	17.5	-	122	-	93.0	-	203	-
5	10.6	-	67.0	-	43.5	-	97.0	-
10	6.75	-	39.3	-	20.4	-	46.5	-
20	3.83	-	22.2	-	6.80	-	17.5	-
30	2.53	-	14.8	-	2.85	-	5.50	-
40	1.78	-	10.1	-	.95	-	0	-
50	1.28	-	6.50	-	.16	-	-	-
60	.92	-	3.70	-	0	-	-	-
70	.67	-	1.86	-	-	-	-	-
80	.45	-	1.13	-	-	-	-	-
90	.27	-	.76	-	-	-	-	-
95	.19	-	.61	-	-	-	-	-
98	.13	-	.50	-	-	-	-	-
99	.10	-	.41	-	-	-	-	-
99.5	.08	-	.27	-	-	-	-	-
99.8	.07	-	.16	-	-	-	-	-
99.9	.06	-	.11	-	-	-	-	-
Average	2.78	-	19.0	-	10.3	-	23.2	-

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08393200		08394500		08395500		08396000	
	1964-73	-	1933-50(k)	1951-73(k)	1939-73	-	1933-64	-
0.1	300	-	3,300	2,400	12,500	-	212	-
.2	90.0	-	1,950	1,380	7,600	-	132	-
.5	23.0	-	710	430	4,150	-	68.0	-
1	2.1	-	210	113	2,550	-	45.0	-
2	0	-	70.0	28.0	1,530	-	31.2	-
5	-	-	42.5	6.10	975	-	20.0	-
10	-	-	28.6	.44	670	-	13.6	-
20	-	-	10.0	.11	230	-	6.70	-
30	-	-	3.20	0	129	-	5.90	-
40	-	-	1.72	-	94.0	-	3.85	-
50	-	-	1.20	-	73.0	-	2.38	-
60	-	-	.92	-	56.0	-	1.58	-
70	-	-	.70	-	42.5	-	1.02	-
80	-	-	.54	-	29.6	-	.50	-
90	-	-	.41	-	13.6	-	.27	-
95	-	-	.33	-	5.20	-	.20	-
98	-	-	.27	-	1.72	-	.16	-
99	-	-	.23	-	.90	-	.13	-
99.5	-	-	.21	-	.40	-	.12	-
99.8	-	-	.18	-	.16	-	.10	-
99.9	-	-	.17	-	.08	-	.09	-
Average	.91	-	21.1	11.8	253	-	6.27	-

(k): Flow-duration data for two periods (see table 3). Not extended to base period.

NOTE--Columns on right are for base period.

Table 4.—Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08396500		08398500		08400000		08401200	
	1906-08, 1910-30(m)	1931-73(m)	1952-73	-	1952-73	-	1964-73	-
0.1	13,700	13,700	790	-	330	-	550	-
.2	8,700	8,700	460	-	143	-	255	-
.5	4,600	4,600	160	-	28.0	-	74.0	-
1	2,900	2,700	27.0	-	1.4	-	13.0	-
2	1,870	1,700	.70	-	0	-	0	-
5	1,080	990	0	-	-	-	-	-
10	700	640	-	-	-	-	-	-
20	435	282	-	-	-	-	-	-
30	320	173	-	-	-	-	-	-
40	260	122	-	-	-	-	-	-
50	215	92.0	-	-	-	-	-	-
60	176	71.0	-	-	-	-	-	-
70	140	53.0	-	-	-	-	-	-
80	107	37.0	-	-	-	-	-	-
90	76	17.2	-	-	-	-	-	-
95	57	7.20	-	-	-	-	-	-
98	42	1.50	-	-	-	-	-	-
99	34	.40	-	-	-	-	-	-
99.5	29	0	-	-	-	-	-	-
99.8	23	-	-	-	-	-	-	-
99.9	20	-	-	-	-	-	-	-
Average	376	278	5.42	-	3.05	-	5.11	-

(m): Flow-duration data for two separate periods (see table 3).

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08401900		08402000		08405000		08405500	
	1964-73	-	1940 1945-73	-	-	1931-73	1948-73	-
0.1	1,640	-	4,700	-	-	14,000	1,350	-
.2	700	-	2,960	-	-	9,900	770	-
.5	130	-	1,600	-	-	5,050	200	-
1	17.0	-	960	-	-	2,220	81.0	-
2	.50	-	615	-	-	950	32.5	-
5	0	-	435	-	-	315	15.7	-
10	-	-	332	-	-	180	12.9	-
20	-	-	246	-	-	108	10.6	-
30	-	-	176	-	-	79.0	9.20	-
40	-	-	133	-	-	62.0	8.10	-
50	-	-	97.0	-	-	50.0	7.30	-
60	-	-	66.0	-	-	39.0	6.50	-
70	-	-	46.5	-	-	29.7	5.80	-
80	-	-	35.0	-	-	21.2	5.06	-
90	-	-	25.6	-	-	12.3	4.15	-
95	-	-	21.0	-	-	5.20	3.48	-
98	-	-	16.3	-	-	.97	2.86	-
99	-	-	12.0	-	-	.48	2.52	-
99.5	-	-	9.30	-	-	.28	2.24	-
99.8	-	-	7.10	-	-	.16	1.94	-
99.9	-	-	6.10	-	-	.11	1.76	-
Average	8.38	-	162	-	-	156	14.1	-

NOTE—Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08406500		08407500		08408500		08476300	
	1921-25(n)	1938-73(n)	1938-73	-	1938-73	-	1965-72	1931-73
0.1	13,200	15,700	15,700	-	1,600	-	200	152
.2	9,300	10,000	10,000	-	990	-	157	118
.5	5,650	4,650	4,670	-	410	-	111	84.0
1	3,600	2,300	2,320	-	177	-	84.0	63.0
2	2,070	1,100	1,120	-	72.0	-	60.2	47.0
5	610	360	380	-	18.3	-	30.3	22.4
10	500	223	242	-	7.00	-	8.70	7.50
20	332	138	152	-	4.06	-	2.92	2.36
30	262	102	112	-	3.03	-	.02	0
40	220	75.0	83.0	-	2.44	-	0	-
50	190	56.5	63.0	-	2.02	-	-	-
60	166	41.0	46.5	-	1.63	-	-	-
70	145	30.2	34.3	-	1.10	-	-	-
80	124	21.8	24.1	-	.42	-	-	-
90	100	15.1	15.0	-	0	-	-	-
95	82.0	11.8	9.90	-	-	-	-	-
98	63.0	9.60	5.90	-	-	-	-	-
99	53.4	8.60	4.00	-	-	-	-	-
99.5	45.5	7.80	2.84	-	-	-	-	-
99.8	38.0	7.00	1.59	-	-	-	-	-
99.9	33.0	6.60	.98	-	-	-	-	-
Average	342	184	189	-	14.0	-	4.67	3.71

(n): Flow-duration data for two periods of record (see table 3).

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08477000		08477500		08477600		08481500	
	-	1931-73	(p)	1931-73	1954-65	1931-73	1948-73	-
0.1	-	255	600	620	97.0	105	60.0	-
.2	-	201	445	455	77.0	81.0	40.0	-
.5	-	142	288	290	48.0	51.0	25.0	-
1	-	107	197	200	22.0	32.0	19.8	-
2	-	78.0	130	130	7.60	15.5	16.7	-
5	-	38.5	66.0	63.0	.75	2.90	14.8	-
10	-	19.7	30.0	29.7	.24	.35	13.5	-
20	-	11.1	11.5	10.5	.16	.19	12.1	-
30	-	8.30	6.10	5.40	.11	.14	11.2	-
40	-	6.80	3.80	3.55	0	.10	10.3	-
50	-	5.70	2.85	2.63	-	0	9.60	-
60	-	4.76	2.24	1.92	-	-	8.80	-
70	-	3.90	1.50	1.09	-	-	7.90	-
80	-	3.00	.53	.13	-	-	6.94	-
90	-	2.25	0	0	-	-	5.65	-
95	-	1.92	-	-	-	-	4.70	-
98	-	1.63	-	-	-	-	3.76	-
99	-	1.49	-	-	-	-	3.24	-
99.5	-	1.38	-	-	-	-	2.78	-
99.8	-	1.28	-	-	-	-	2.34	-
99.9	-	1.21	-	-	-	-	2.06	-
Average	-	11.0	14.6	13.7	.78	1.15	9.51	-

(p): 1931-33, 1935-55, 1964-68.

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	08486250		08486260		09342500		09346000	
	1966-73	-	1966-73	-	1936-73	1931-73	1936-73	1931-73
0.1	22.0	-	27.0	-	4,200	4,180	1,370	1,350
.2	12.0	-	15.5	-	3,780	3,770	1,220	1,210
.5	3.90	-	5.50	-	3,240	3,230	1,040	1,030
1	1.50	-	1.60	-	2,770	2,770	905	900
2	.30	-	0	-	2,300	2,300	760	750
5	0	-	-	-	1,630	1,630	540	540
10	-	-	-	-	1,120	1,100	380	380
20	-	-	-	-	520	512	200	197
30	-	-	-	-	245	242	103	104
40	-	-	-	-	143	140	69.0	69.0
50	-	-	-	-	99.0	96.0	54.0	53.0
60	-	-	-	-	75.0	74.0	45.0	44.0
70	-	-	-	-	61.0	60.0	39.0	38.0
80	-	-	-	-	51.0	50.0	34.0	33.0
90	-	-	-	-	42.0	41.0	29.0	28.0
95	-	-	-	-	35.0	35.0	25.5	25.0
98	-	-	-	-	30.0	28.0	22.5	22.0
99	-	-	-	-	25.0	24.0	20.2	19.5
99.5	-	-	-	-	21.0	20.0	18.0	17.6
99.8	-	-	-	-	16.0	16.0	15.5	15.5
99.9	-	-	-	-	13.0	13.0	14.0	14.0
Average	.096	-	.110	-	355	355	139	136

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	09346400		09349500		09349800		09350500	
	1963-73	1931-73	1940-72	1931-73	1963-73	1931-73	-	1931-73
0.1	5,660	6,430	3,740	3,740	3,800	4,350	-	10,200
.2	5,180	5,870	3,310	3,310	3,400	3,900	-	9,300
.5	4,490	5,090	2,760	2,760	2,930	3,340	-	8,100
1	3,900	4,430	2,320	2,330	2,500	2,880	-	7,100
2	3,300	3,720	1,880	1,920	2,080	2,370	-	6,030
5	2,460	2,700	1,320	1,350	1,460	1,640	-	4,450
10	1,690	1,890	890	900	960	1,080	-	3,100
20	940	963	450	450	530	540	-	1,560
30	550	506	230	237	305	280	-	830
40	360	307	135	138	196	167	-	502
50	255	215	93.0	95.0	138	116	-	346
60	187	167	74.0	74.0	100	89.0	-	264
70	150	137	62.0	61.0	79.0	71.0	-	212
80	123	114	53.0	51.0	63.0	58.0	-	174
90	99.0	93.0	44.0	42.0	50.0	46.0	-	139
95	84.0	79.0	38.6	37.0	42.0	39.0	-	116
98	70.0	63.5	33.6	32.0	35.0	32.0	-	94.0
99	62.0	52.0	30.0	29.0	32.0	27.3	-	78.0
99.5	57.0	41.3	27.0	26.5	29.3	23.0	-	65.0
99.8	50.0	30.3	24.0	23.9	26.6	18.4	-	47.0
99.9	46.0	24.0	22.0	22.1	25.0	15.0	-	36.0
Average	611	644	304	307	351	370	-	1,031

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Period	Station number and periods							
	09354500		09355000		09355500		09356500	
	1952-73	-	1952-73	-	1956-61	1931-73 (q)	1931-54	1931-73 (q)
0.1	2,840	-	211	-	12,500	12,600	14,700	13,800
.2	2,510	-	171	-	11,600	11,600	13,200	12,400
.5	2,070	-	133	-	10,300	10,000	11,300	10,700
1	1,710	-	113	-	9,000	8,700	9,800	9,200
2	1,340	-	95.0	-	7,600	7,440	8,200	7,660
5	820	-	77.0	-	5,400	5,450	6,020	5,500
10	460	-	65.2	-	3,650	3,650	4,140	3,700
20	228	-	54.6	-	1,980	1,870	2,020	1,900
30	165	-	46.4	-	1,130	1,080	1,120	1,090
40	134	-	36.8	-	750	760	680	683
50	111	-	24.3	-	530	560	470	480
60	92.0	-	10.9	-	395	430	353	365
70	75.0	-	6.24	-	314	360	288	290
80	61.0	-	4.44	-	258	304	232	231
90	49.0	-	3.26	-	206	250	180	170
95	40.5	-	2.62	-	176	212	130	125
98	33.4	-	2.10	-	150	180	90.0	75.0
99	29.6	-	1.84	-	136	160	57.0	46.0
99.5	26.4	-	1.64	-	126	148	40.0	27.0
99.8	23.2	-	1.43	-	115	130	26.0	11.0
99.9	21.3	-	1.32	-	108	121	21.0	1.0
Average	210	-	30.3	-	1,307	1,321	1,376	1,299

(q): Unregulated condition (see table 3).

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	09361500		09363500		09364500		09365000	
	(r)	1931-73	1935-73	1931-73	(s)	1931-73	1931-61	-
0.1	7,300	7,300	8,600	8,500	8,900	8,500	22,000	-
.2	6,700	6,700	8,000	7,860	8,200	7,830	20,300	-
.5	5,800	5,800	7,010	6,860	7,140	6,820	17,700	-
1	5,030	5,000	6,040	5,850	6,100	5,820	15,400	-
2	4,240	4,200	5,010	4,840	5,000	4,720	12,800	-
5	3,200	3,000	3,430	3,420	3,450	3,220	9,100	-
10	2,230	2,070	2,370	2,320	2,260	2,130	6,100	-
20	1,200	1,080	1,290	1,280	1,210	1,140	3,250	-
30	680	620	765	752	700	670	1,850	-
40	450	416	533	518	465	450	1,180	-
50	340	316	393	385	360	348	850	-
60	275	263	320	316	297	286	660	-
70	234	225	270	266	257	247	560	-
80	203	197	238	235	225	213	475	-
90	177	174	204	199	178	168	390	-
95	160	160	182	179	124	109	293	-
98	147	147	163	162	55.0	48.0	170	-
99	140	140	155	153	31.0	28.0	116	-
99.5	134	134	145	146	18.0	16.0	80.0	-
99.8	127	127	138	138	9.50	8.80	50.0	-
99.9	122	122	133	133	6.60	6.50	34.0	-
Average	820	761	898	893	875	810	2,211	-

(r): 1898, 1900, 1913-1925, 1926-73
(s): 1914, 1920-25, 1931-73

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	09365500		09366500		09368000		09386050	
	1919-73	1931-73	-	1931-73	1935-61	-	1960-66	1931-73
0.1	600	600	-	685	25,000	-	85.0	82.0
.2	535	533	-	590	22,200	-	67.0	62.0
.5	450	442	-	460	18,700	-	44.0	40.0
1	385	368	-	360	16,000	-	26.0	26.0
2	315	296	-	260	13,400	-	10.7	12.8
5	212	194	-	143	9,300	-	1.80	2.00
10	132	122	-	82.0	6,300	-	.76	.73
20	62.0	55.0	-	39.0	3,440	-	.47	.41
30	30.0	28.5	-	21.0	1,950	-	.35	.31
40	18.8	17.8	-	13.6	1,270	-	.28	.26
50	13.0	12.8	-	9.60	910	-	.23	.22
60	9.90	9.90	-	6.60	730	-	.19	.19
70	7.80	7.80	-	4.60	613	-	.16	.16
80	6.30	6.30	-	2.90	530	-	.13	.13
90	5.10	5.10	-	1.23	420	-	.10	.10
95	4.30	4.30	-	.20	280	-	.08	.08
98	3.60	3.60	-	0	112	-	.06	.05
99	3.20	3.20	-	-	59.0	-	.05	.04
99.5	2.90	2.90	-	-	33.0	-	.04	.03
99.8	2.50	2.50	-	-	19.0	-	.03	.02
99.9	2.30	2.30	-	-	14.7	-	.03	.02
Average	45.0	42.3	-	32.1	2,321	-	1.06	1.23

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	09395500		09430500		09430600		09431000	
	1941-45	-	-	1931-73	1968-73	1931-73	1943-51	1931-73
0.1	380	-	-	2,900	620	533	3,700	3,850
.2	310	-	-	2,120	480	414	2,400	2,820
.5	222	-	-	1,450	355	297	1,450	1,930
1	160	-	-	1,080	290	222	980	1,450
2	104	-	-	780	233	156	660	1,030
5	50.0	-	-	446	162	91.0	400	590
10	19.6	-	-	263	97.0	55.0	235	340
20	4.0	-	-	148	33.0	26.0	117	184
30	.35	-	-	102	17.0	14.0	90.0	120
40	0	-	-	82.0	10.3	9.00	76.0	91.0
50	-	-	-	69.0	6.30	5.50	67.0	71.0
60	-	-	-	59.0	3.70	3.10	56.0	53.0
70	-	-	-	51.0	2.00	1.70	44.0	39.0
80	-	-	-	44.0	1.20	.90	31.0	28.0
90	-	-	-	35.5	.50	.30	19.5	19.0
95	-	-	-	30.0	0	0	13.5	14.0
98	-	-	-	25.0	-	-	9.80	10.2
99	-	-	-	23.0	-	-	8.30	8.60
99.5	-	-	-	21.2	-	-	7.40	7.40
99.8	-	-	-	20.0	-	-	6.60	6.60
99.9	-	-	-	18.8	-	-	6.10	6.00
Average	8.57	-	-	132	31.5	20.6	118	156

NOTE--Columns on right are for base period.

Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Continued

Percent	Station number and periods							
	09431500		09432000		09442680		09442692	
	1931-55 1963-73	1931-73	-	1931-73	1960-73	1931-73	1967-73	-
0.1	4,900	4,360	-	4,350	740	690	63.0	-
.2	3,300	3,130	-	3,200	600	523	54.0	-
.5	2,050	2,100	-	2,220	440	366	40.0	-
1	1,550	1,570	-	1,650	340	265	25.5	-
2	1,130	1,140	-	1,200	248	175	12.4	-
5	660	662	-	665	120	82.0	4.55	-
10	378	378	-	380	49.0	40.0	3.37	-
20	206	202	-	203	21.8	18.8	3.13	-
30	135	133	-	133	13.8	12.1	3.05	-
40	104	104	-	105	10.1	9.10	3.00	-
50	89.0	86.0	-	87.0	7.80	7.30	2.95	-
60	77.0	69.0	-	72.0	6.30	6.10	2.90	-
70	64.0	54.0	-	57.0	5.20	5.00	2.85	-
80	48.0	40.0	-	38.5	4.20	4.10	2.80	-
90	28.0	25.0	-	17.3	3.20	3.10	2.74	-
95	18.0	17.0	-	8.0	2.65	2.52	2.69	-
98	11.0	11.0	-	3.90	2.16	2.02	2.64	-
99	8.40	8.30	-	3.00	1.93	1.80	2.62	-
99.5	6.70	6.50	-	2.50	1.76	1.62	2.60	-
99.8	5.20	5.00	-	2.20	1.61	1.46	2.57	-
99.9	4.50	4.20	-	2.00	1.50	1.35	2.54	-
Average	184	177	-	180	26.7	21.1	3.58	-

NOTE--Columns on right are for base period.

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Table 4.--Flow-duration data and average stream discharge, in cubic feet per second for selected periods of record - Concluded

Percent	Station number and periods							
	09443000		09443500		09444000		09454000	
	1965-73	1931-73	1913-14 1916-22	-	-	1931-73	1920-25	-
0.1	3,000	1,980	350	-	-	2,300	620	-
.2	2,060	1,400	272	-	-	1,680	340	-
.5	1,370	980	192	-	-	1,130	133	-
1	1,040	700	144	-	-	810	53.0	-
2	790	470	106	-	-	543	9.3	-
5	440	223	69.0	-	-	266	0	-
10	160	99.0	44.5	-	-	137	-	-
20	56.0	39.0	24.5	-	-	69.0	-	-
30	30.0	21.0	14.2	-	-	45.0	-	-
40	18.5	13.6	9.00	-	-	35.0	-	-
50	12.0	9.00	6.65	-	-	29.0	-	-
60	7.30	5.10	5.15	-	-	24.7	-	-
70	3.20	1.70	4.10	-	-	21.0	-	-
80	.85	0	3.38	-	-	17.6	-	-
90	0	-	2.80	-	-	13.6	-	-
95	-	-	2.45	-	-	11.0	-	-
98	-	-	2.10	-	-	8.50	-	-
99	-	-	1.90	-	-	7.20	-	-
99.5	-	-	1.76	-	-	6.10	-	-
99.8	-	-	1.58	-	-	5.00	-	-
99.9	-	-	1.47	-	-	4.20	-	-
Average	80.9	47.0	17.4	-	-	72.1	2.90	-

NOTE--Columns on right are for base period.

SUMMARY OF RESULTS

Techniques suggested by Searcy (1959) were used to define flow-duration curves and to estimate base period data. The extension of short-term records to a common base period provides more comparable flow-duration data and average discharges because it decreases the time sampling error inherent in short-term records.

The flow-duration data presented in table 4 for 156 different sites represents a multitude of different conditions. Only about 32 of the stations have streamflow that can be considered natural flow, all others being affected by regulation or diversions for irrigation, or both. Some streams are affected by a few changes in the pattern of regulation while others are affected by many such changes. Information on the factors that have affected the variability of flow is included in the remarks paragraph of the station description (table 3).

The shapes of flow-duration curves vary significantly from one river basin to another throughout the State (figs. 3-9). There is, however, similarity in shape of curves for adjacent drainage basins that are affected by the same hydrologic conditions (fig. 3). The curves for stations on the same stream are usually very similar in shape (figs. 4, 5, 7, 8, 9), but curves for stations on the Pecos River near Anton Chico, at Santa Rosa, and near Puerto de Luna are quite different because of local geologic conditions. Underflow which reduces surface flow at the Santa Rosa station and enters the channel as inflow from springs downstream from Santa Rosa accounts for the differences in shape (fig. 6).

REFERENCES

Reiland, L. J., and Haynes, Jr., G. L., 1963, Flow characteristics of New Mexico streams: New Mexico State Engineer Special Report, 342 p.

Searcy, J. K., 1959, Flow-duration curves: U.S. Geological Survey Water-Supply Paper 1542-A, 33 p.

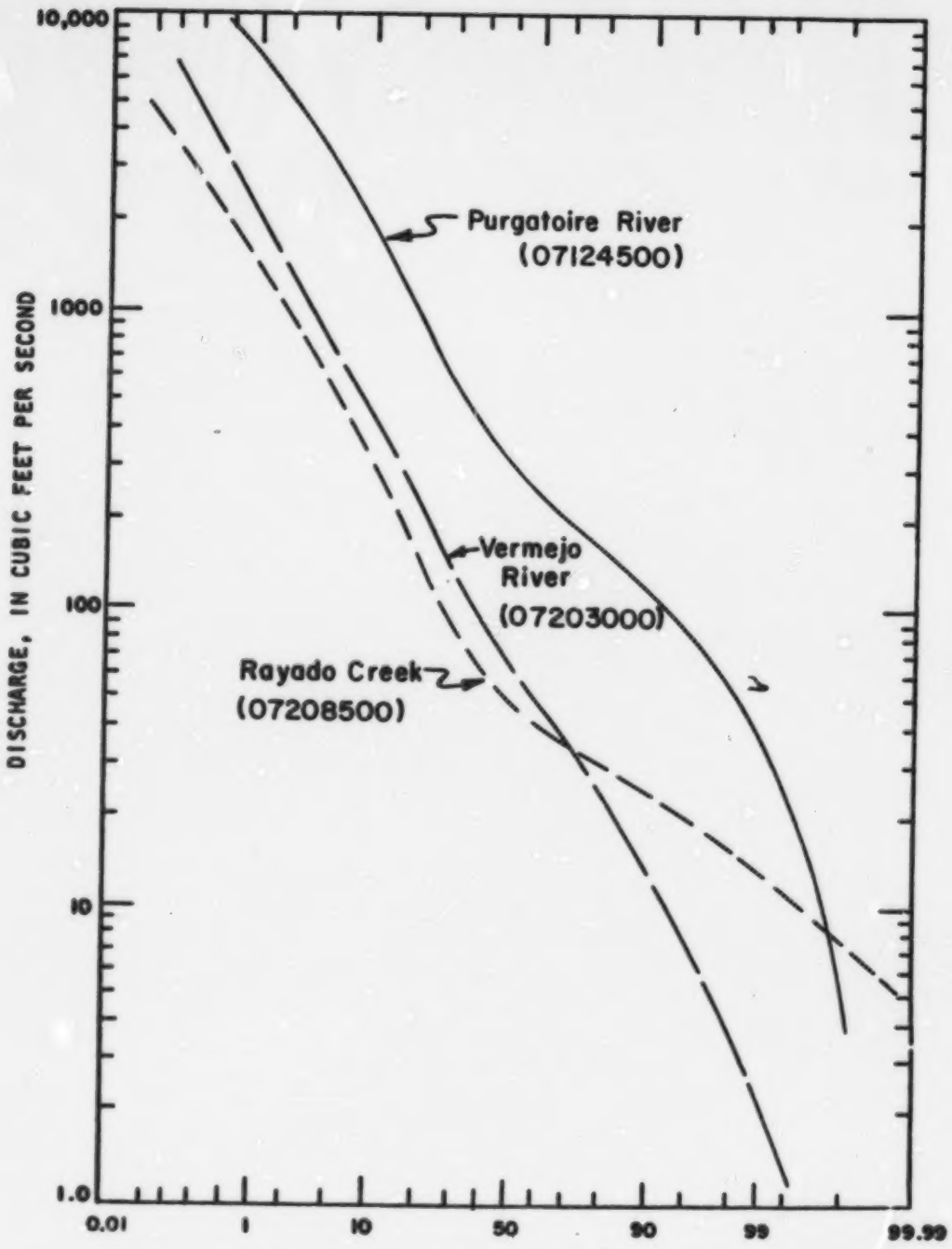

Figure 3.--Flow duration curves for Purgatoire River at Trinidad, Colorado, Vermejo River near Dawson, New Mexico, and Rayado Creek at Sauble Ranch, near Cimarron, New Mexico for base period 1931-73.

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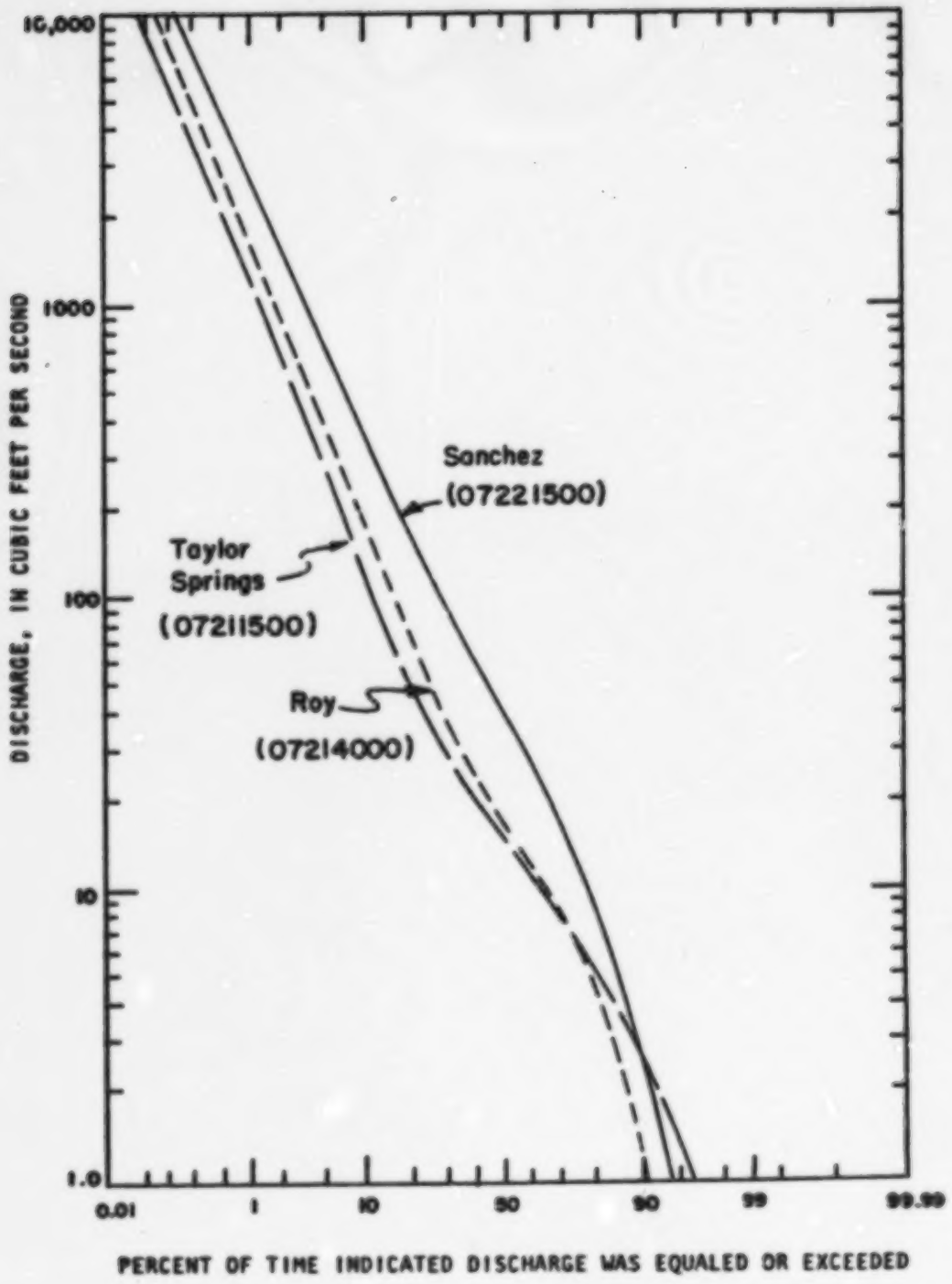

Figure 4.--Flow-duration curves for Canadian River near Taylor Springs, near Roy and near Sanchez, New Mexico, for base period 1931-73.

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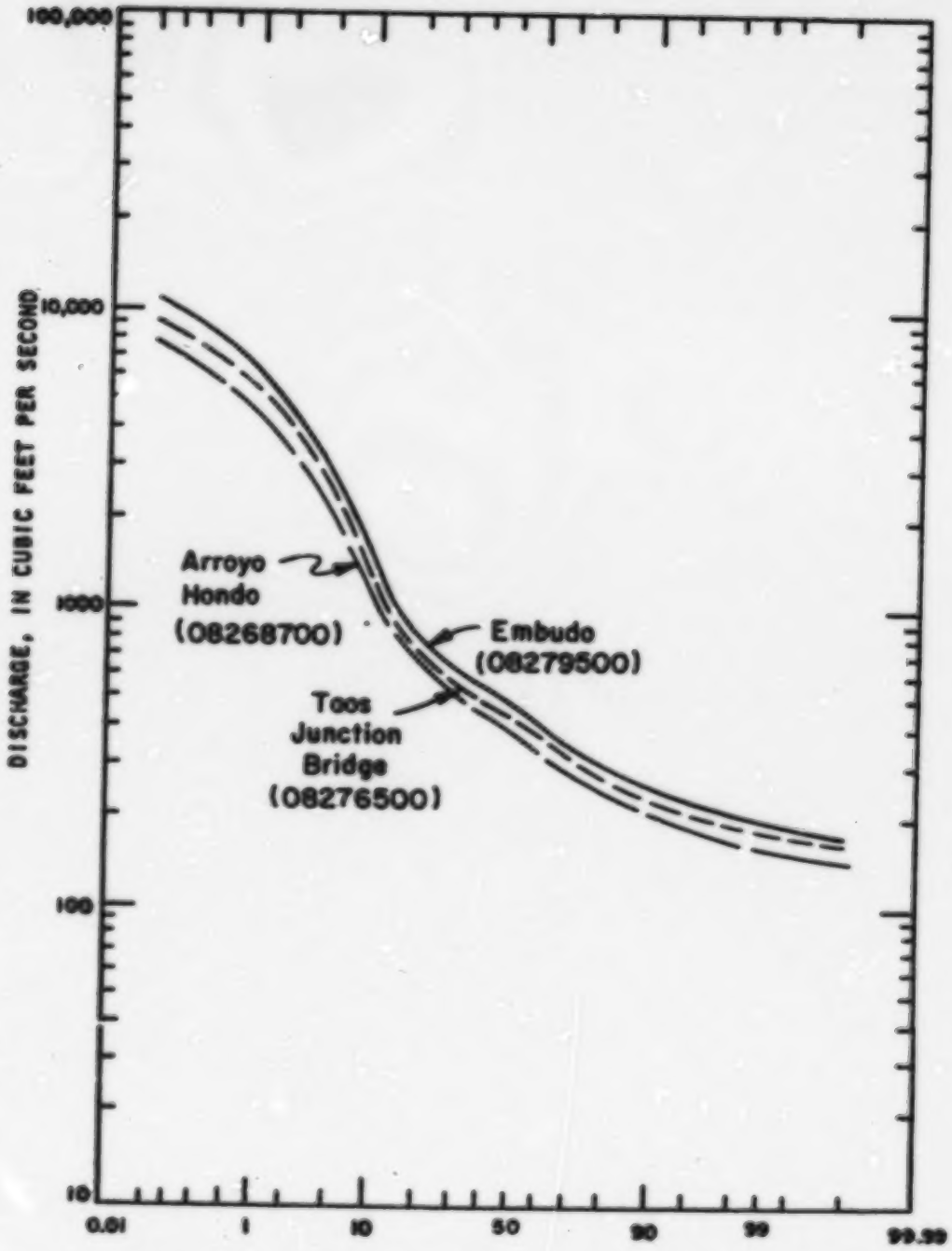

Figure 5.--Flow-duration curves for Rio Grande near Arroyo Hondo, below Taos Junction Bridge near Taos, and at Embudo, New Mexico, for base period 1931-73.

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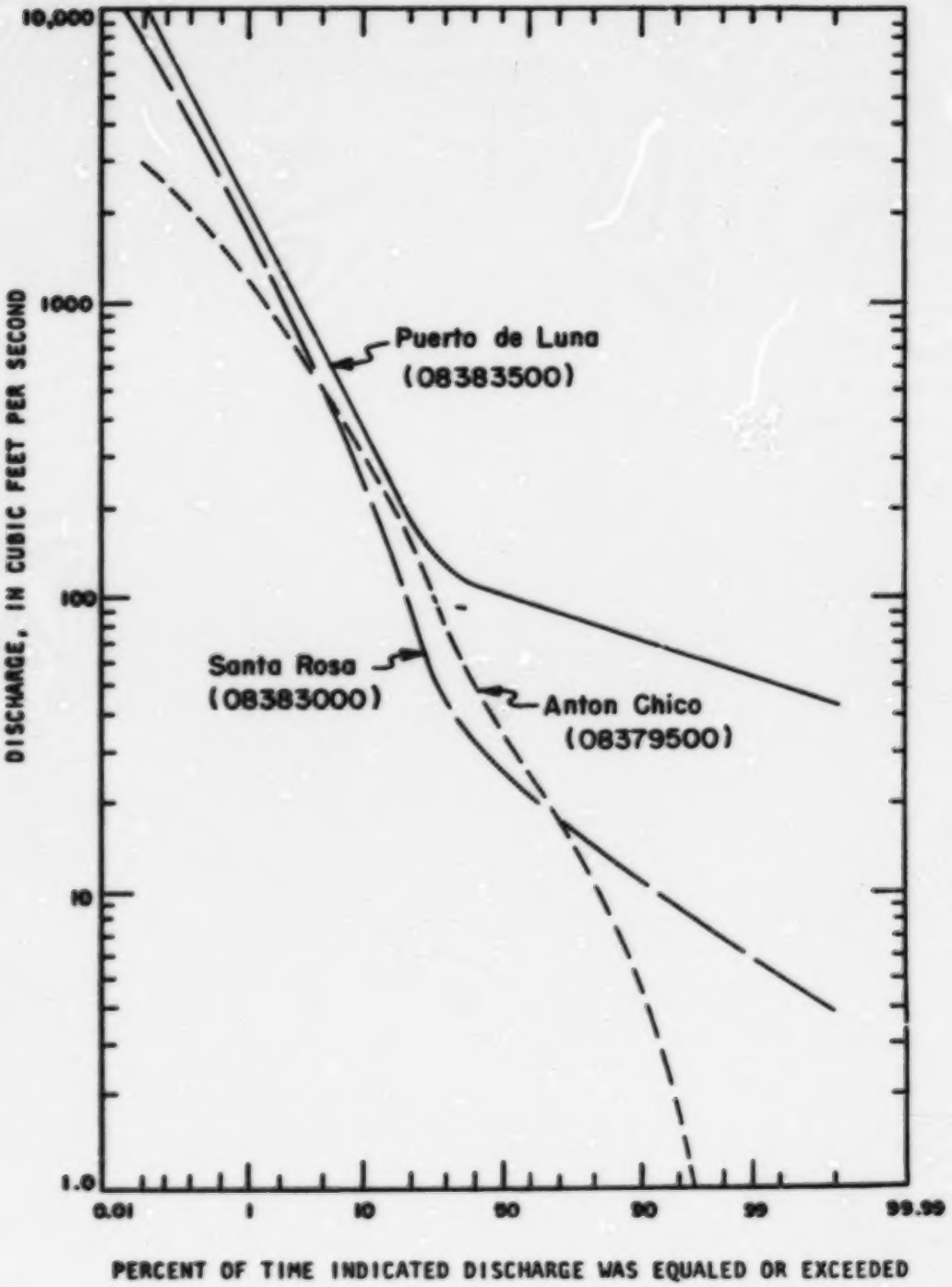

Figure 6.--Flow-duration curves for Pecos River near Anton Chico, at Santa Rosa, and near Puerto de Luna, New Mexico, for base period 1931-73.

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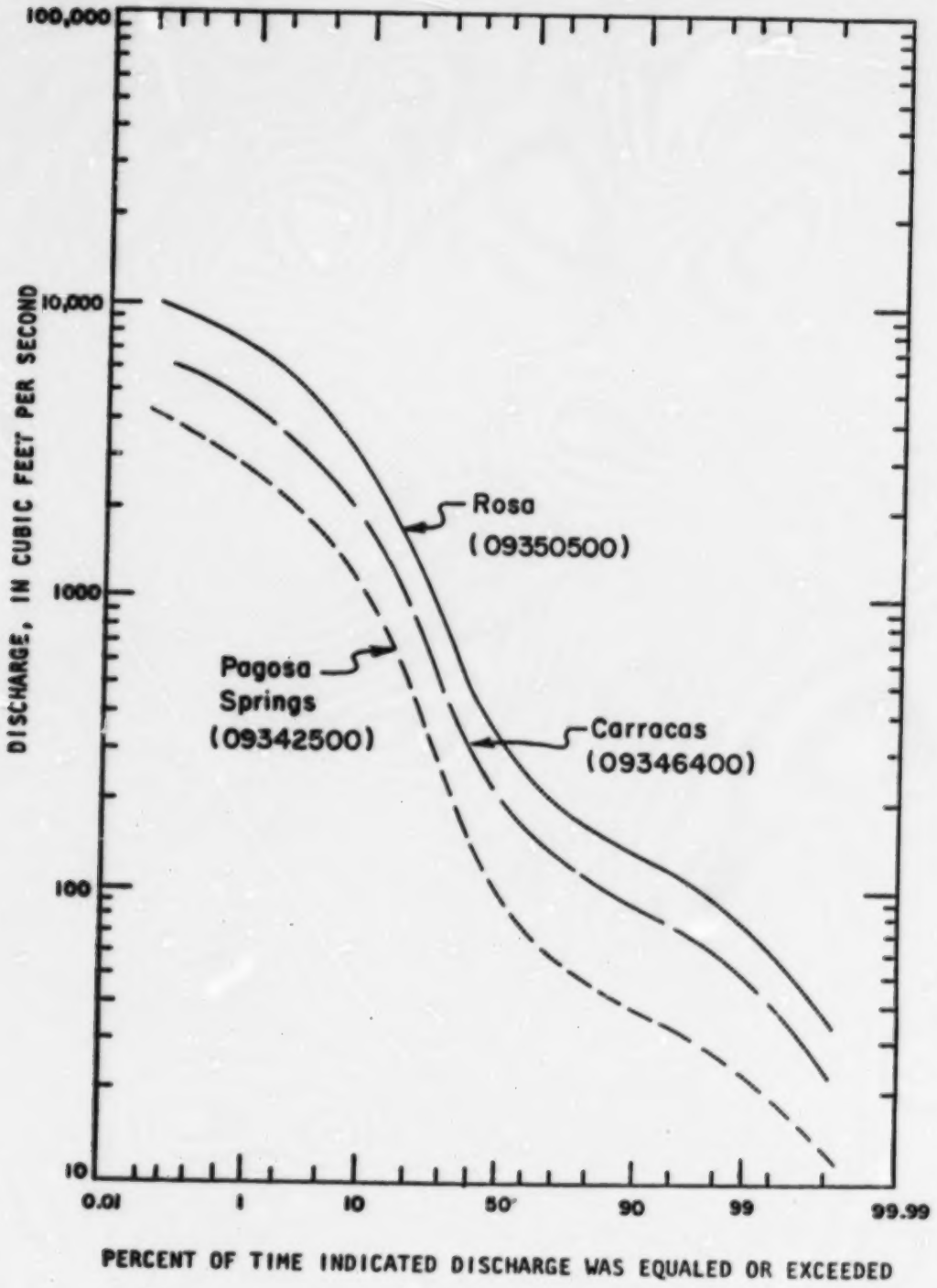

Figure 7.--Flow-duration curves for San Juan River at Pagosa Springs, Colorado, near Carracas, Colorado, and at Rosa, New Mexico, for base period 1931-73.

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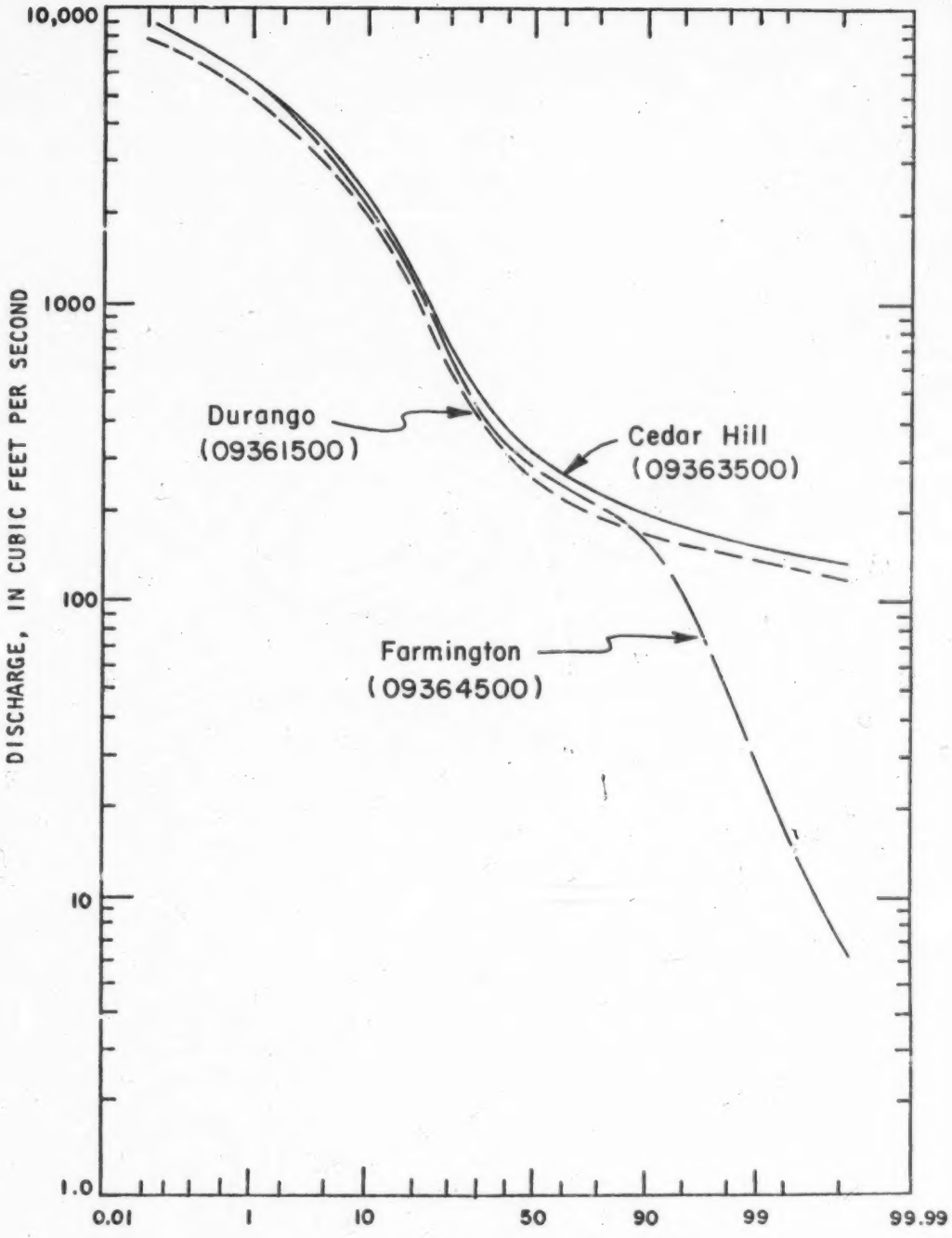

Figure 8.--Flow-duration curves for Animas River at Durango, Colorado, near Cedar Hill, and near Farmington, New Mexico, for base period 1931-73.

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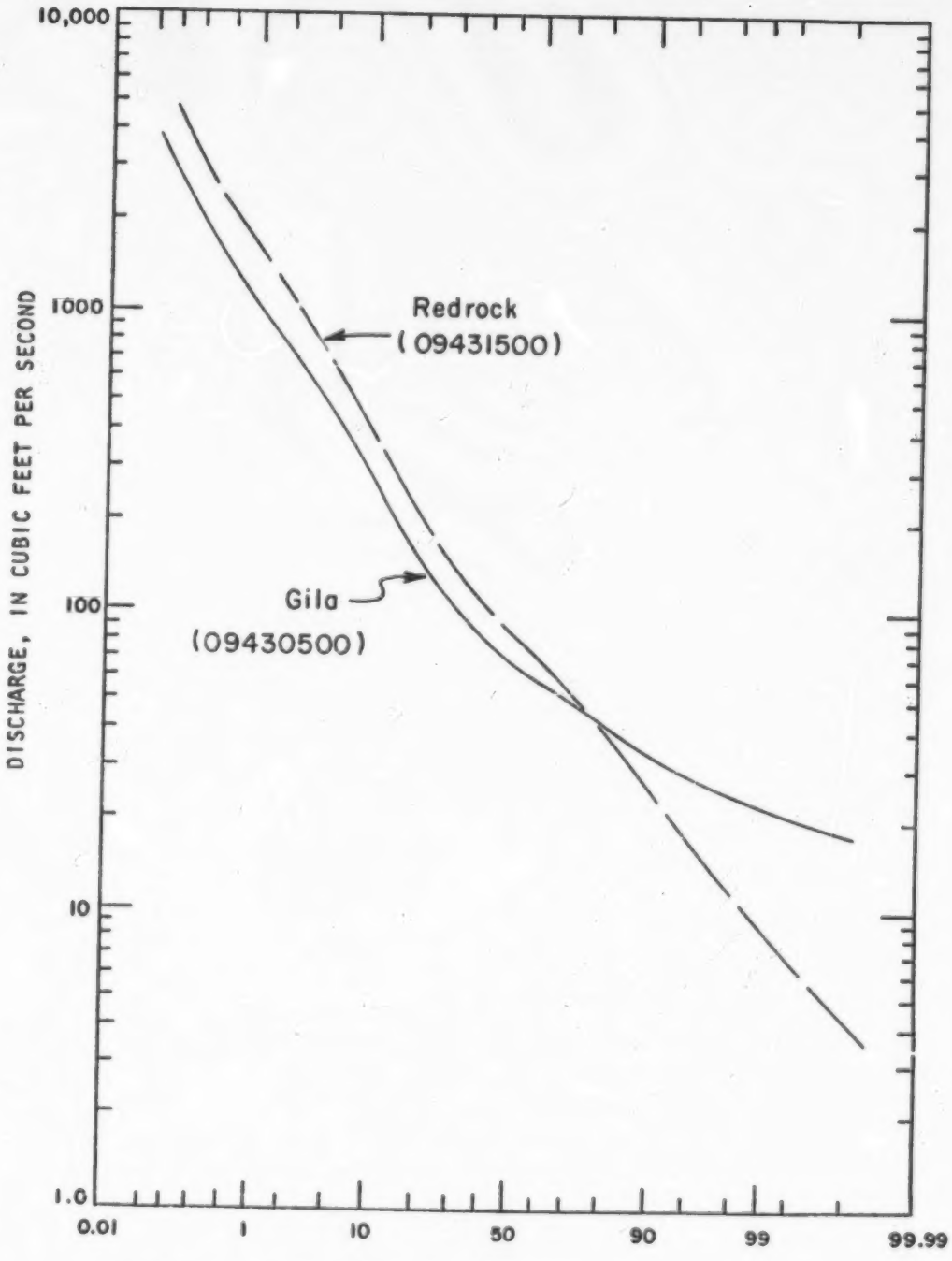

Figure 9.--Flow-duration curves for Gila River near Gila and near Redrock, New Mexico, for base period 1931-73.

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